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Thr Gly Thr Val Ala Pro Glu Lys Cys Leu Phe Gly Ala Met Leu
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Asn Ile Ala Ala Val Leu Cys Ile Ala Thr Ile Tyr Val Arg Tyr
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Lys Gln Val His Ala Leu Ser Pro Glu Glu Asn Val Ile Ile Lys
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Leu Asn Lys Ala Gly Leu Val Leu Gly Ile Leu Ser Cys Leu Gly
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Leu Ser Ile Val Ala Asn Phe Gln Lys Thr Thr Leu Phe Ala Ala
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Ala Glu Trp Ser Met Ser Phe Ser Phe Phe Gly Phe Phe Leu Thr
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Tyr Ile Arg Asp Phe Gln Lys Ile Ser Leu Arg Val Glu Ala Asn
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                 35              40                  45

Lys Lys Ala Asn Gln Gln Leu Asn Phe Thr Glu Ala Lys Glu Ala
                 50                  55                  60

Cys Arg Leu Leu Gly Leu Ser Leu Ala Gly Lys Asp Gln Val Glu
                 65                  70                  75

Thr Ala Leu Lys Ala Ser Phe Glu Thr Cys Ser Tyr Gly Trp Val
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Gly Asp Gly Phe Val Val Ile Ser Arg Ile Ser Pro Asn Pro Lys
                 95                  100                 105

Cys Gly Lys Asn Gly Val Gly Val Leu Ile Trp Lys Val Pro Val
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Ser Arg Gln Phe Ala Ala Tyr Cys Tyr Asn Ser Ser Asp Thr Trp
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                    170                 175                 180

Pro Thr Thr Thr Pro Pro Ala Pro Ala Ser Thr Ser Ile Pro Arg
                    185                 190                 195

Arg Lys Lys Leu Ile Cys Val Thr Glu Val Phe Met Glu Thr Ser
                    200                 205                 210

Thr Met Ser Thr Glu Thr Glu Pro Phe Val Glu Asn Lys Ala Ala
                    215                 220                 225

Phe Lys Asn Glu Ala Ala Gly Phe Gly Gly Val Pro Thr Ala Leu
                    230                 235                 240

Leu Val Leu Ala Leu Leu Phe Phe Gly Ala Ala Ala Gly Leu Gly
                    245                 250                 255

Phe Cys Tyr Val Lys Arg Tyr Val Lys Ala Phe Pro Phe Thr Asn
                    260                 265                 270

Lys Asn Gln Gln Lys Glu Met Ile Glu Thr Lys Val Val Lys Glu
                    275                 280                 285

Glu Lys Ala Asn Asp Ser Asn Pro Asn Glu Glu Ser Lys Lys Thr
                    290                 295                 300

Asp Lys Asn Pro Glu Glu Ser Lys Ser Pro Ser Lys Thr Thr Val
                    305                 310                 315

Arg Cys Leu Glu Ala Glu Val
                    320
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<210> 7
<211> 2586
<212> DNA
<213> Homo Sapien

<400> 7
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cacccgcagc ccggcggcct cccggcggga gcgagcagat ccagtccggc 100

ccgcagcgca actcggtcca gtcggggcgg cggctgcggg cgcagagcgg 150

agatgcagcg gcttggggcc accctgctgt gcctgctgct ggcggcggcg 200

gtccccacgg cccccgcgcc cgctccgacg gcgacctcgg ctccagtcaa 250

gcccggcccg gctctcagct acccgcagga ggaggccacc ctcaatgaga 300
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16

tgttccgcga ggttgaggaa ctgatggagg acacgcagca caaattgcgc 350

agcgcggtgg aagagatgga ggcagaagaa gctgctgcta aagcatcatc 400

agaagtgaac ctggcaaact tacctcccag ctatcacaat gagaccaaca 450

cagacacgaa ggttggaaat aataccatcc atgtgcaccg agaaattcac 500

aagataacca acaaccagac tggacaaatg gtcttttcag agacagttat 550

cacatctgtg ggagacgaag aaggcagaag gagccacgag tgcatcatcg 600

acgaggactg tgggcccagc atgtactgcc agtttgccag cttccagtac 650

acctgccagc catgccgggg ccagaggatg ctctgcaccc gggacagtga 700

gtgctgtgga gaccagctgt gtgtctgggg tcactgcacc aaaatggcca 750

ccaggggcag caatgggacc atctgtgaca accagaggga ctgccagccg 800

gggctgtgct gtgccttcca gagaggcctg ctgttccctg tgtgcacacc 850

cctgcccgtg gagggcgagc tttgccatga ccccgccagc cggcttctgg 900

acctcatcac ctgggagcta gagcctgatg gagccttgga ccgatgccct 950

tgtgccagtg gcctcctctg ccagccccac agccacagcc tggtgtatgt 1000

gtgcaagccg accttcgtgg ggagccgtga ccaagatggg gagatcctgc 1050

tgcccagaga ggtccccgat gagtatgaag ttggcagctt catggaggag 1100

gtgcgccagg agctggagga cctggagagg agcctgactg aagagatggc 1150

gctgggggag cctgcggctg ccgccgctgc actgctggga ggggaagaga 1200

tttagatctg gaccaggctg tgggtagatg tgcaatagaa atagctaatt 1250

tatttcccca ggtgtgtgct ttaggcgtgg gctgaccagg cttcttccta 1300

catcttcttc ccagtaagtt tcccctctgg cttgacagca tgaggtgttg 1350

tgcatttgtt cagctccccc aggctgttct ccaggcttca cagtctggtg 1400

cttgggagag tcaggcaggg ttaaactgca ggagcagttt gccacccctg 1450

tccagattat tggctgcttt gcctctacca gttggcagac agccgtttgt 1500

tctacatggc tttgataatt gtttgagggg aggagatgga aacaatgtgg 1550

agtctccctc tgattggttt tggggaaatg tggagaagag tgccctgctt 1600

tgcaaacatc aacctggcaa aaatgcaaca aatgaatttt ccacgcagtt 1650

ctttccatgg gcataggtaa gctgtgcctt cagctgttgc agatgaaatg 1700

ttctgttcac cctgcattac atgtgtttat tcatccagca gtgttgctca 1750

17

```
gctcctacct ctgtgccagg gcagcatttt catatccaag atcaattccc 1800

tctctcagca cagcctgggg aggggggtcat tgttctcctc gtccatcagg 1850

gatctcagag gctcagagac tgcaagctgc ttgcccaagt cacacagcta 1900

gtgaagacca gagcagtttc atctggttgt gactctaagc tcagtgctct 1950

ctccactacc ccacaccagc cttggtgcca ccaaaagtgc tccccaaaag 2000

gaaggagaat gggatttttc ttgaggcatg cacatctgga attaaggtca 2050

aactaattct cacatccctc taaaagtaaa ctactgttag gaacagcagt 2100

gttctcacag tgtggggcag ccgtccttct aatgaagaca atgatattga 2150

cactgtccct ctttggcagt tgcattagta actttgaaag gtatatgact 2200

gagcgtagca tacaggttaa cctgcagaaa cagtacttag gtaattgtag 2250

ggcgaggatt ataaatgaaa tttgcaaaat cacttagcag caactgaaga 2300

caattatcaa ccacgtggag aaaatcaaac cgagcagggc tgtgtgaaac 2350

atggttgtaa tatgcgactg cgaacactga actctacgcc actccacaaa 2400

tgatgttttc aggtgtcatg gactgttgcc accatgtatt catccagagt 2450

tcttaaagtt taaagttgca catgattgta taagcatgct ttctttgagt 2500

tttaaattat gtataaacat aagttgcatt tagaaatcaa gcataaatca 2550

cttcaactgc aaaaaaaaaa aaaaaaaaaa aaaaaa 2586
```

<210> 8
<211> 350
<212> PRT
<213> Homo Sapien

<400> 8
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Met Gln Arg Leu Gly Ala Thr Leu Leu Cys Leu Leu Leu Ala Ala
 1               5                  10                  15

Ala Val Pro Thr Ala Pro Ala Pro Ala Pro Thr Ala Thr Ser Ala
                20              25                  30

Pro Val Lys Pro Gly Pro Ala Leu Ser Tyr Pro Gln Glu Glu Ala
                35              40                  45

Thr Leu Asn Glu Met Phe Arg Glu Val Glu Glu Leu Met Glu Asp
                50              55                  60

Thr Gln His Lys Leu Arg Ser Ala Val Glu Glu Met Glu Ala Glu
                65              70                  75

Glu Ala Ala Ala Lys Ala Ser Ser Glu Val Asn Leu Ala Asn Leu
```

18
```

Pro Pro Ser Tyr His Asn Glu Thr Asn Thr Asp Thr Lys Val Gly
                95                      100                     105

Asn Asn Thr Ile His Val His Arg Glu Ile His Lys Ile Thr Asn
                110                     115                     120

Asn Gln Thr Gly Gln Met Val Phe Ser Glu Thr Val Ile Thr Ser
                125                     130                     135

Val Gly Asp Glu Glu Gly Arg Arg Ser His Glu Cys Ile Ile Asp
                140                     145                     150

Glu Asp Cys Gly Pro Ser Met Tyr Cys Gln Phe Ala Ser Phe Gln
                155                     160                     165

Tyr Thr Cys Gln Pro Cys Arg Gly Gln Arg Met Leu Cys Thr Arg
                170                     175                     180

Asp Ser Glu Cys Cys Gly Asp Gln Leu Cys Val Trp Gly His Cys
                185                     190                     195

Thr Lys Met Ala Thr Arg Gly Ser Asn Gly Thr Ile Cys Asp Asn
                200                     205                     210

Gln Arg Asp Cys Gln Pro Gly Leu Cys Cys Ala Phe Gln Arg Gly
                215                     220                     225

Leu Leu Phe Pro Val Cys Thr Pro Leu Pro Val Glu Gly Glu Leu
                230                     235                     240

Cys His Asp Pro Ala Ser Arg Leu Leu Asp Leu Ile Thr Trp Glu
                245                     250                     255

Leu Glu Pro Asp Gly Ala Leu Asp Arg Cys Pro Cys Ala Ser Gly
                260                     265                     270

Leu Leu Cys Gln Pro His Ser His Ser Leu Val Tyr Val Cys Lys
                275                     280                     285

Pro Thr Phe Val Gly Ser Arg Asp Gln Asp Gly Glu Ile Leu Leu
                290                     295                     300

Pro Arg Glu Val Pro Asp Glu Tyr Glu Val Gly Ser Phe Met Glu
                305                     310                     315

Glu Val Arg Gln Glu Leu Glu Asp Leu Glu Arg Ser Leu Thr Glu
                320                     325                     330

Glu Met Ala Leu Gly Glu Pro Ala Ala Ala Ala Ala Leu Leu
                335                     340                     345

Gly Gly Glu Glu Ile
                350

<210> 9

<211> 1395
<212> DNA
<213> Homo Sapien

<400> 9
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tgtgcgtctt ccagggctac tcatccaaag gcctaatcca acgttctgtc 150

ttcaatctgc aaatctatgg ggtcctgggg ctcttctgga cccttaactg 200

ggtactggcc ctgggccaat gcgtcctcgc tggagccttt gcctccttct 250

actgggcctt ccacaagccc caggacatcc ctaccttccc cttaatctct 300

gccttcatcc gcacactccg ttaccacact gggtcattgg catttggagc 350

cctcatcctg acccttgtgc agatagcccg ggtcatcttg gagtatattg 400

accacaagct cagaggagtg cagaaccctg tagcccgctg catcatgtgc 450

tgtttcaagt gctgcctctg gtgtctggaa aaatttatca agttcctaaa 500

ccgcaatgca tacatcatga tcgccatcta cgggaagaat ttctgtgtct 550

cagccaaaaa tgcgttcatg ctactcatgc gaaacattgt cagggtggtc 600

gtcctggaca aagtcacaga cctgctgctg ttctttggga agctgctggt 650

ggtcggaggc gtgggggtcc tgtccttctt tttttctcc ggtcgcatcc 700

cggggctggg taaagacttt aagagccccc acctcaacta ttactggctg 750

cccatcatga cctccatcct gggggcctat gtcatcgcca gcggcttctt 800

cagcgttttc ggcatgtgtg tggacacgct cttcctctgc ttcctggaag 850

acctggagcg gaacaacggc tccctggacc ggccctacta catgtccaag 900

agccttctaa agattctggg caagaagaac gaggcgcccc cggacaacaa 950

gaagaggaag aagtgacagc tccggccctg atccaggact gcaccccacc 1000

cccaccgtcc agccatccaa cctcacttcg ccttacaggt ctccattttg 1050

tggtaaaaaa aggttttagg ccaggcgccg tggctcacgc ctgtaatcca 1100

acactttgag aggctgaggc gggcggatca cctgagtcag gagttcgaga 1150

ccagcctggc caacatggtg aaacctccgt ctctattaaa aatacaaaaa 1200

ttagccgaga gtggtggcat gcacctgtca tcccagctac tcgggaggct 1250

gaggcaggag aatcgcttga acccgggagg cagaggttgc agtgagccga 1300

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gatcgcgcca ctgcactcca acctgggtga cagactctgt ctccaaaaca 1350

aaacaaacaa acaaaaagat tttattaaag atattttgtt aactc 1395
```

<210> 10
<211> 321
<212> PRT
<213> Homo Sapien

<400> 10
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Arg Thr Arg Gly Arg Thr Arg Gly Gly Cys Glu Lys Val Pro Ile
  1               5                  10                  15

Asn Thr Ser Cys Asn Pro Thr Ala His Leu Val Asn Ser Ser Cys
                 20                  25                  30

Pro Gly Leu Met Cys Val Phe Gln Gly Tyr Ser Ser Lys Gly Leu
                 35                  40                  45

Ile Gln Arg Ser Val Phe Asn Leu Gln Ile Tyr Gly Val Leu Gly
                 50                  55                  60

Leu Phe Trp Thr Leu Asn Trp Val Leu Ala Leu Gly Gln Cys Val
                 65                  70                  75

Leu Ala Gly Ala Phe Ala Ser Phe Tyr Trp Ala Phe His Lys Pro
                 80                  85                  90

Gln Asp Ile Pro Thr Phe Pro Leu Ile Ser Ala Phe Ile Arg Thr
                 95                 100                 105

Leu Arg Tyr His Thr Gly Ser Leu Ala Phe Gly Ala Leu Ile Leu
                110                 115                 120

Thr Leu Val Gln Ile Ala Arg Val Ile Leu Glu Tyr Ile Asp His
                125                 130                 135

Lys Leu Arg Gly Val Gln Asn Pro Val Ala Arg Cys Ile Met Cys
                140                 145                 150

Cys Phe Lys Cys Cys Leu Trp Cys Leu Glu Lys Phe Ile Lys Phe
                155                 160                 165

Leu Asn Arg Asn Ala Tyr Ile Met Ile Ala Ile Tyr Gly Lys Asn
                170                 175                 180

Phe Cys Val Ser Ala Lys Asn Ala Phe Met Leu Leu Met Arg Asn
                185                 190                 195

Ile Val Arg Val Val Val Leu Asp Lys Val Thr Asp Leu Leu Leu
                200                 205                 210

Phe Phe Gly Lys Leu Leu Val Val Gly Gly Val Gly Val Leu Ser
                215                 220                 225

Phe Phe Phe Phe Ser Gly Arg Ile Pro Gly Leu Gly Lys Asp Phe
                230                 235                 240
```

```
Lys Ser Pro His Leu Asn Tyr Tyr Trp Leu Pro Ile Met Thr Ser
                245                 250                 255
Ile Leu Gly Ala Tyr Val Ile Ala Ser Gly Phe Phe Ser Val Phe
                260                 265                 270

Gly Met Cys Val Asp Thr Leu Phe Leu Cys Phe Leu Glu Asp Leu
                275                 280                 285

Glu Arg Asn Asn Gly Ser Leu Asp Arg Pro Tyr Tyr Met Ser Lys
                290                 295                 300

Ser Leu Leu Lys Ile Leu Gly Lys Lys Asn Glu Ala Pro Pro Asp
                305                 310                 315

Asn Lys Lys Arg Lys Lys
                320
```

<210> 11
<211> 1901
<212> DNA
<213> Homo Sapien

<400> 11

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gcctgcctgg gagcctgctc cctgctcagc tgcgcgtcct gcctctgcgg 100

ctctgccccc tgcatcctgt gcagctgctg ccccgccagc cgcaactcca 150

ccgtgagccg cctcatcttc acgttcttcc tcttcctggg ggtgctggtg 200

tccatcatta tgctgagccc gggcgtggag agtcagctct acaagctgcc 250

ctgggtgtgt gaggaggggg ccgggatccc caccgtcctg cagggccaca 300

tcgactgtgg ctccctgctt ggctaccgcg ctgtctaccg catgtgcttc 350

gccacggcgg ccttcttctt cttctttttc accctgctca tgctctgcgt 400

gagcagcagc cgggaccccc gggctgccat ccagaatggg ttttggttct 450

ttaagttcct gatcctggtg ggcctcaccg tgggtgcctt ctacatccct 500

gacggctcct tcaccaacat ctggttctac ttcggcgtcg tgggctcctt 550

cctcttcatc ctcatccagc tggtgctgct catcgacttt gcgcactcct 600

ggaaccagcg gtggctgggc aaggccgagg agtgcgattc ccgtgcctgg 650

tacgcaggcc tcttcttctt cactctcctc ttctacttgc tgtcgatcgc 700

ggccgtggcg ctgatgttca gtactacac tgagcccagc ggctgccacg 750

agggcaaggt cttcatcagc ctcaacctca ccttctgtgt ctgcgtgtcc 800

atcgctgctg tcctgcccaa ggtccaggac gcccagccca actcgggtct 850
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22

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gctgcaggcc tcggtcatca ccctctacac catgtttgtc acctggtcag 900

ccctatccag tatccctgaa cagaaatgca accccattt gccaacccag 950

ctgggcaacg agacagttgt ggcaggcccc gagggctatg agacccagtg 1000
gtgggatgcc ccgagcattg tgggcctcat catcttcctc ctgtgcaccc 1050

tcttcatcag tctgcgctcc tcagaccacc ggcaggtgaa cagcctgatg 1100

cagaccgagg agtgcccacc tatgctagac gccacacagc agcagcagca 1150

gcaggtggca gcctgtgagg gccgggcctt tgacaacgag caggacggcg 1200

tcacctacag ctactccttc ttccacttct gcctggtgct ggcctcactg 1250

cacgtcatga tgacgctcac caactggtac aagcccggtg agacccggaa 1300

gatgatcagc acgtggaccg ccgtgtgggt gaagatctgt gccagctggg 1350

cagggctgct cctctacctg tggaccctgg tagccccact cctcctgcgc 1400

aaccgcgact tcagctgagg cagcctcaca gcctgccatc tggtgcctcc 1450

tgccacctgg tgcctctcgg ctcggtgaca gccaacctgc cccctcccca 1500

caccaatcag ccaggctgag ccccaccc tgccccagct ccaggacctg 1550

cccctgagcc gggccttcta gtcgtagtgc cttcagggtc cgaggagcat 1600

caggctcctg cagagcccca tcccccgcc acacccacac ggtggagctg 1650

cctcttcctt ccctcctcc ctgttgccca tactcagcat ctcggatgaa 1700

agggctccct tgtcctcagg ctccacggga gcggggctgc tggagagagc 1750

ggggaactcc caccacagtg gggcatccgg cactgaagcc ctggtgttcc 1800

tggtcacgtc ccccagggga ccctgccccc ttcctggact tcgtgcctta 1850

ctgagtctct aagactttt ctaataaaca agccagtgcg tgtaaaaaaa 1900

a 1901

<210> 12
<211> 457
<212> PRT
<213> Homo Sapien

<400> 12
 Met Gly Ala Cys Leu Gly Ala Cys Ser Leu Leu Ser Cys Ala Ser
  1               5                  10                  15

 Cys Leu Cys Gly Ser Ala Pro Cys Ile Leu Cys Ser Cys Cys Pro
                 20                  25                  30

 Ala Ser Arg Asn Ser Thr Val Ser Arg Leu Ile Phe Thr Phe Phe
```

23

Leu Phe Leu Gly Val Leu Val Ser Ile Ile Met Leu Ser Pro Gly
                    50   55   60

Val Glu Ser Gln Leu Tyr Lys Leu Pro Trp Val Cys Glu Glu Gly
                    65   70   75

Ala Gly Ile Pro Thr Val Leu Gln Gly His Ile Asp Cys Gly Ser
                    80   85   90

Leu Leu Gly Tyr Arg Ala Val Tyr Arg Met Cys Phe Ala Thr Ala
                    95   100   105

Ala Phe Phe Phe Phe Phe Phe Thr Leu Leu Met Leu Cys Val Ser
                   110   115   120

Ser Ser Arg Asp Pro Arg Ala Ala Ile Gln Asn Gly Phe Trp Phe
                   125   130   135

Phe Lys Phe Leu Ile Leu Val Gly Leu Thr Val Gly Ala Phe Tyr
                   140   145   150

Ile Pro Asp Gly Ser Phe Thr Asn Ile Trp Phe Tyr Phe Gly Val
                   155   160   165

Val Gly Ser Phe Leu Phe Ile Leu Ile Gln Leu Val Leu Leu Ile
                   170   175   180

Asp Phe Ala His Ser Trp Asn Gln Arg Trp Leu Gly Lys Ala Glu
                   185   190   195

Glu Cys Asp Ser Arg Ala Trp Tyr Ala Gly Leu Phe Phe Phe Thr
                   200   205   210

Leu Leu Phe Tyr Leu Leu Ser Ile Ala Ala Val Ala Leu Met Phe
                   215   220   225

Met Tyr Tyr Thr Glu Pro Ser Gly Cys His Glu Gly Lys Val Phe
                   230   235   240

Ile Ser Leu Asn Leu Thr Phe Cys Val Cys Val Ser Ile Ala Ala
                   245   250   255

Val Leu Pro Lys Val Gln Asp Ala Gln Pro Asn Ser Gly Leu Leu
                   260   265   270

Gln Ala Ser Val Ile Thr Leu Tyr Thr Met Phe Val Thr Trp Ser
                   275   280   285

Ala Leu Ser Ser Ile Pro Glu Gln Lys Cys Asn Pro His Leu Pro
                   290   295   300

Thr Gln Leu Gly Asn Glu Thr Val Val Ala Gly Pro Glu Gly Tyr
                   305   310   315

Glu Thr Gln Trp Trp Asp Ala Pro Ser Ile Val Gly Leu Ile Ile

```
                 320                    325                    330

Phe Leu Leu Cys Thr Leu Phe Ile Ser Leu Arg Ser Ser Asp His
                 335                    340                    345

Arg Gln Val Asn Ser Leu Met Gln Thr Glu Glu Cys Pro Pro Met
                 350                    355                    360

Leu Asp Ala Thr Gln Gln Gln Gln Gln Val Ala Ala Cys Glu
                 365                    370                    375

Gly Arg Ala Phe Asp Asn Glu Gln Asp Gly Val Thr Tyr Ser Tyr
                 380                    385                    390

Ser Phe Phe His Phe Cys Leu Val Leu Ala Ser Leu His Val Met
                 395                    400                    405

Met Thr Leu Thr Asn Trp Tyr Lys Pro Gly Glu Thr Arg Lys Met
                 410                    415                    420

Ile Ser Thr Trp Thr Ala Val Trp Val Lys Ile Cys Ala Ser Trp
                 425                    430                    435

Ala Gly Leu Leu Leu Tyr Leu Trp Thr Leu Val Ala Pro Leu Leu
                 440                    445                    450

Leu Arg Asn Arg Asp Phe Ser
                 455

<210> 13
<211> 1572
<212> DNA
<213> Homo Sapien

<400> 13
 cgggccagcc tggggcggcc ggccaggaac cacccgttaa ggtgtcttct 50

 ctttagggat ggtgaggttg gaaaaagact cctgtaaccc tcctccagga 100

 tgaaccacct gccagaagac atggagaacg ctctcaccgg gagccagagc 150

 tcccatgctt ctctgcgcaa tatccattcc atcaacccca cacaactcat 200

 ggccaggatt gagtcctatg aaggaaggga aaagaaaggc atatctgatg 250

 tcaggaggac tttctgtttg tttgtcacct ttgacctctt attcgtaaca 300

 ttactgtgga taatagagtt aaatgtgaat ggaggcattg agaacacatt 350

 agagaaggag gtgatgcagt atgactacta ttcttcatat tttgatatat 400

 ttcttctggc agtttttcga tttaaagtgt taatacttgc atatgctgtg 450

 tgcagactgc gccattggtg ggcaatagcg ttgacaacgg cagtgaccag 500

 tgccttttta ctagcaaaag tgatcctttc gaagcttttc tctcaagggg 550
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25

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cttttggcta tgtgctgccc atcatttcat tcatccttgc ctggattgag 600

acgtggttcc tggatttcaa agtgttacct caagaagcag aagaagaaaa 650

cagactcctg atagttcagg atgcttcaga gagggcagca cttatacctg 700

gtggtctttc tgatggtcag ttttattccc ctcctgaatc cgaagcagga 750

tctgaagaag ctgaagaaaa acaggacagt gagaaaccac ttttagaact 800

atgagtacta cttttgttaa atgtgaaaaa ccctcacaga aagtcatcga 850

ggcaaaaaga ggcaggcagt ggagtctccc tgtcgacagt aaagttgaaa 900

tggtgacgtc cactgctggc tttattgaac agctaataaa gatttattta 950
ttgtaatacc tcacaaacgt tgtaccatat ccatgcacat ttagttgcct 1000

gcctgtggct ggtaaggtaa tgtcatgatt catcctctct tcagtgagac 1050

tgagcctgat gtgttaacaa ataggtgaag aaagtcttgt gctgtattcc 1100

taatcaaaag acttaatata ttgaagtaac acttttttag taagcaagat 1150

acctttttat ttcaattcac agaatggaat ttttttgttt catgtctcag 1200

atttattttg tatttctttt ttaacactct acatttccct tgtttttaa 1250

ctcatgcaca tgtgctcttt gtacagtttt aaaaagtgta ataaaatctg 1300

acatgtcaat gtggctagtt ttatttttct tgttttgcat tatgtgtatg 1350

gcctgaagtg ttggacttgc aaaaggggaa gaaaggaatt gcgaatacat 1400

gtaaaatgtc accagacatt tgtattattt ttatcatgaa atcatgtttt 1450

tctctgattg ttctgaaatg ttctaaatac tcttattttg aatgcacaaa 1500

atgacttaaa ccattcatat catgtttcct ttgcgttcag ccaatttcaa 1550

ttaaaatgaa ctaaattaaa aa 1572
```

<210> 14
<211> 234
<212> PRT
<213> Homo Sapien

<400> 14

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Met Asn His Leu Pro Glu Asp Met Glu Asn Ala Leu Thr Gly Ser
 1               5                  10                  15

Gln Ser Ser His Ala Ser Leu Arg Asn Ile His Ser Ile Asn Pro
                20                  25                  30

Thr Gln Leu Met Ala Arg Ile Glu Ser Tyr Glu Gly Arg Glu Lys
                35                  40                  45

Lys Gly Ile Ser Asp Val Arg Arg Thr Phe Cys Leu Phe Val Thr
```

26

```
                    50                      55                      60

Phe Asp Leu Leu Phe Val Thr Leu Leu Trp Ile Ile Glu Leu Asn
                 65                      70                      75

Val Asn Gly Gly Ile Glu Asn Thr Leu Glu Lys Glu Val Met Gln
                 80                      85                      90

Tyr Asp Tyr Tyr Ser Ser Tyr Phe Asp Ile Phe Leu Leu Ala Val
                 95                     100                     105

Phe Arg Phe Lys Val Leu Ile Leu Ala Tyr Ala Val Cys Arg Leu
                110                     115                     120

Arg His Trp Trp Ala Ile Ala Leu Thr Thr Ala Val Thr Ser Ala
                125                     130                     135

Phe Leu Leu Ala Lys Val Ile Leu Ser Lys Leu Phe Ser Gln Gly
                140                     145                     150

Ala Phe Gly Tyr Val Leu Pro Ile Ile Ser Phe Ile Leu Ala Trp
                155                     160                     165

Ile Glu Thr Trp Phe Leu Asp Phe Lys Val Leu Pro Gln Glu Ala
                170                     175                     180

Glu Glu Glu Asn Arg Leu Leu Ile Val Gln Asp Ala Ser Glu Arg
                185                     190                     195

Ala Ala Leu Ile Pro Gly Gly Leu Ser Asp Gly Gln Phe Tyr Ser
                200                     205                     210

Pro Pro Glu Ser Glu Ala Gly Ser Glu Glu Ala Glu Glu Lys Gln
                215                     220                     225

Asp Ser Glu Lys Pro Leu Leu Glu Leu
                230

<210> 15
<211> 2768
<212> DNA
<213> Homo Sapien

<400> 15
 actcgaacgc agttgcttcg ggacccagga ccccctcggg cccgacccgc 50

 caggaaagac tgaggccgcg gcctgccccg cccggctccc tgcgccgccg 100

 ccgcctcccg ggacagaaga tgtgctccag ggtccctctg ctgctgccgc 150

 tgctcctgct actggccctg gggcctgggg tgcagggctg cccatccggc 200

 tgccagtgca gccagccaca gacagtcttc tgcactgccc gccaggggac 250

 cacggtgccc cgagacgtgc cacccgacac ggtggggctg tacgtctttg 300

 agaacggcat caccatgctc gacgcaggca gctttgccgg cctgccgggc 350
```

27

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ctgcagctcc tggacctgtc acagaaccag atcgccagcc tgcccagcgg 400

ggtcttccag ccactcgcca acctcagcaa cctggacctg acggccaaca 450

ggctgcatga aatcaccaat gagaccttcc gtggcctgcg cgcgcctcgag 500

cgcctctacc tgggcaagaa ccgcatccgc cacatccagc ctggtgcctt 550

cgacacgctc gaccgcctcc tggagctcaa gctgcaggac aacgagctgc 600

gggcactgcc cccgctgcgc ctgccccgcc tgctgctgct ggacctcagc 650

cacaacagcc tcctggccct ggagcccggc atcctggaca ctgccaacgt 700

ggaggcgctg cggctggctg gtctggggct gcagcagctg gacgaggggc 750

tcttcagccg cttgcgcaac ctccacgacc tggatgtgtc cgacaaccag 800

ctggagcgag tgccacctgt gatccgaggc ctccggggcc tgacgcgcct 850

gcggctggcc ggcaacaccc gcattgccca gctgcggccc gaggacctgg 900

ccggcctggc tgccctgcag gagctggatg tgagcaacct aagcctgcag 950

gccctgcctg gcgacctctc gggcctcttc ccccgcctgc ggctgctggc 1000

agctgcccgc aaccccttca actgcgtgtg cccccctgagc tggtttggcc 1050

cctgggtgcg cgagagccac gtcacactgg ccagccctga ggagacgcgc 1100

tgccacttcc cgcccaagaa cgctggccgg ctgctcctgg agcttgacta 1150

cgccgacttt ggctgcccag ccaccaccac cacagccaca gtgcccacca 1200

cgaggcccgt ggtgcgggag cccacagcct tgtcttctag cttggctcct 1250

acctggctta gccccacagc gccggccact gaggcccca gcccgccctc 1300

cactgcccca ccgactgtag ggcctgtccc ccagccccag gactgcccac 1350

cgtccacctg cctcaatggg ggcacatgcc acctggggac acggcaccac 1400

ctggcgtgct tgtgccccga aggcttcacg ggcctgtact gtgagagcca 1450

gatggggcag gggacacggc ccagccctac accagtcacg ccgaggccac 1500

cacggtccct gaccctgggc atcgagccgg tgagccccac ctccctgcgc 1550

gtggggctgc agcgctacct ccaggggagc tccgtgcagc tcaggagcct 1600

ccgtctcacc tatcgcaacc tatcgggccc tgataagcgg ctggtgacgc 1650

tgcgactgcc tgcctcgctc gctgagtaca cggtcaccca gctgcggccc 1700

aacgccactt actccgtctg tgtcatgcct ttggggcccg ggcgggtgcc 1750
```

28

```
ggagggcgag gaggcctgcg gggaggccca tacacccccа gccgtccact 1800

ccaaccacgc cccagtcacc caggcccgcg agggcaacct gccgctcctc 1850

attgcgcccg ccctggccgc ggtgctcctg ccgcgctgg ctgcggtggg 1900

ggcagcctac tgtgtgcggc gggggcgggc catggcagca gcggctcagg 1950

acaaagggca ggtggggcca ggggctgggc ccctggaact ggagggagtg 2000

aaggtcccct tggagccagg cccgaaggca acagagggcg gtggagaggc 2050

cctgcccagc gggtctgagt gtgaggtgcc actcatgggc ttcccagggc 2100

ctggcctcca gtcacccctc cacgcaaagc cctacatcta agccagagag 2150

agacagggca gctggggccg ggctctcagc cagtgagatg gccagccccc 2200

tcctgctgcc acaccacgta agttctcagt cccaacctcg gggatgtgtg 2250

cagacagggc tgtgtgacca cagctgggcc ctgttccctc tggacctcgg 2300

tctcctcatc tgtgagatgc tgtggcccag ctgacgagcc ctaacgtccc 2350

cagaaccgag tgcctatgag dacagtgtcc gccctgccct ccgcaacgtg 2400

cagtccctgg gcacggcggg ccctgccatg tgctggtaac gcatgcctgg 2450

gtcctgctgg gctctcccac tccaggcgga ccctgggggc cagtgaagga 2500

agctcccgga aagagcagag ggagagcggg taggcggctg tgtgactcta 2550

gtcttggccc caggaagcga aggaacaaaa gaaactggaa aggaagatgc 2600

tttaggaaca tgttttgctt ttttaaaata tatatattta taagagatcc 2650

tttcccattt attctgggaa gatgtttttc aaactcagag acaaggactt 2700

tggttttttgt aagacaaacg atgatatgaa ggccttttgt aagaaaaat 2750

aaaagatgaa gtgtgaaa 2768
```

<210> 16
<211> 673
<212> PRT
<213> Homo Sapien

<400> 16

```
 Met Cys Ser Arg Val Pro Leu Leu Leu Pro Leu Leu Leu Leu Leu
  1               5                  10                  15

 Ala Leu Gly Pro Gly Val Gln Gly Cys Pro Ser Gly Cys Gln Cys
                 20                  25                  30

 Ser Gln Pro Gln Thr Val Phe Cys Thr Ala Arg Gln Gly Thr Thr
                 35                  40                  45
```

```
Val Pro Arg Asp Val Pro Pro Asp Thr Val Gly Leu Tyr Val Phe
                50                  55                      60

Glu Asn Gly Ile Thr Met Leu Asp Ala Gly Ser Phe Ala Gly Leu
                65                  70                      75

Pro Gly Leu Gln Leu Leu Asp Leu Ser Gln Asn Gln Ile Ala Ser
                80                  85                      90

Leu Pro Ser Gly Val Phe Gln Pro Leu Ala Asn Leu Ser Asn Leu
                95                  100                     105

Asp Leu Thr Ala Asn Arg Leu His Glu Ile Thr Asn Glu Thr Phe
                110                 115                     120

Arg Gly Leu Arg Arg Leu Glu Arg Leu Tyr Leu Gly Lys Asn Arg
                125                 130                     135

Ile Arg His Ile Gln Pro Gly Ala Phe Asp Thr Leu Asp Arg Leu
                140                 145                     150

Leu Glu Leu Lys Leu Gln Asp Asn Glu Leu Arg Ala Leu Pro Pro
                155                 160                     165

Leu Arg Leu Pro Arg Leu Leu Leu Leu Asp Leu Ser His Asn Ser
                170                 175                     180

Leu Leu Ala Leu Glu Pro Gly Ile Leu Asp Thr Ala Asn Val Glu
                185                 190                     195

Ala Leu Arg Leu Ala Gly Leu Gly Leu Gln Gln Leu Asp Glu Gly
                200                 205                     210

Leu Phe Ser Arg Leu Arg Asn Leu His Asp Leu Asp Val Ser Asp
                215                 220                     225

Asn Gln Leu Glu Arg Val Pro Pro Val Ile Arg Gly Leu Arg Gly
                230                 235                     240

Leu Thr Arg Leu Arg Leu Ala Gly Asn Thr Arg Ile Ala Gln Leu
                245                 250                     255

Arg Pro Glu Asp Leu Ala Gly Leu Ala Ala Leu Gln Glu Leu Asp
                260                 265                     270

Val Ser Asn Leu Ser Leu Gln Ala Leu Pro Gly Asp Leu Ser Gly
                275                 280                     285

Leu Phe Pro Arg Leu Arg Leu Leu Ala Ala Ala Arg Asn Pro Phe
                290                 295                     300

Asn Cys Val Cys Pro Leu Ser Trp Phe Gly Pro Trp Val Arg Glu
                305                 310                     315

Ser His Val Thr Leu Ala Ser Pro Glu Glu Thr Arg Cys His Phe
                320                 325                     330
```

                                    30

```
Pro Pro Lys Asn Ala Gly Arg Leu Leu Leu Glu Leu Asp Tyr Ala
            335             340             345

Asp Phe Gly Cys Pro Ala Thr Thr Thr Thr Ala Thr Val Pro Thr
            350             355             360

Thr Arg Pro Val Val Arg Glu Pro Thr Ala Leu Ser Ser Ser Leu
            365             370             375

Ala Pro Thr Trp Leu Ser Pro Thr Ala Pro Ala Thr Glu Ala Pro
            380             385             390

Ser Pro Pro Ser Thr Ala Pro Pro Thr Val Gly Pro Val Pro Gln
            395             400             405

Pro Gln Asp Cys Pro Pro Ser Thr Cys Leu Asn Gly Gly Thr Cys
            410             415             420

His Leu Gly Thr Arg His His Leu Ala Cys Leu Cys Pro Glu Gly
            425             430             435

Phe Thr Gly Leu Tyr Cys Glu Ser Gln Met Gly Gln Gly Thr Arg
            440             445             450

Pro Ser Pro Thr Pro Val Thr Pro Arg Pro Pro Arg Ser Leu Thr
            455             460             465

Leu Gly Ile Glu Pro Val Ser Pro Thr Ser Leu Arg Val Gly Leu
            470             475             480

Gln Arg Tyr Leu Gln Gly Ser Ser Val Gln Leu Arg Ser Leu Arg
            485             490             495

Leu Thr Tyr Arg Asn Leu Ser Gly Pro Asp Lys Arg Leu Val Thr
            500             505             510

Leu Arg Leu Pro Ala Ser Leu Ala Glu Tyr Thr Val Thr Gln Leu
            515             520             525

Arg Pro Asn Ala Thr Tyr Ser Val Cys Val Met Pro Leu Gly Pro
            530             535             540

Gly Arg Val Pro Glu Gly Glu Glu Ala Cys Gly Glu Ala His Thr
            545             550             555

Pro Pro Ala Val His Ser Asn His Ala Pro Val Thr Gln Ala Arg
            560             565             570

Glu Gly Asn Leu Pro Leu Leu Ile Ala Pro Ala Leu Ala Ala Val
            575             580             585

Leu Leu Ala Ala Leu Ala Ala Val Gly Ala Ala Tyr Cys Val Arg
            590             595             600

Arg Gly Arg Ala Met Ala Ala Ala Ala Gln Asp Lys Gly Gln Val
            605             610             615
```

31

```
Gly Pro Gly Ala Gly Pro Leu Glu Leu Glu Gly Val Lys Val Pro
            620             625             630

Leu Glu Pro Gly Pro Lys Ala Thr Glu Gly Gly Gly Glu Ala Leu
            635             640             645

Pro Ser Gly Ser Glu Cys Glu Val Pro Leu Met Gly Phe Pro Gly
            650             655             660

Pro Gly Leu Gln Ser Pro Leu His Ala Lys Pro Tyr Ile
            665             670
```

<210> 17
<211> 1672
<212> DNA
<213> Homo Sapien

<400> 17

```
gcagcggcga ggcggcggtg gtggctgagt ccgtggtggc agaggcgaag 50

gcgacagctc atgcgggtcc ggatagggct gacgctgctg ctgtgtgcgg 100

tgctgctgag cttggcctcg gcgtcctcgg atgaagaagg cagccaggat 150

gaatccttag attccaagac tactttgaca tcagatgagt cagtaaagga 200

ccatactact gcaggcagag tagttgctgg tcaaatattt cttgattcag 250

aagaatctga attagaatcc tctattcaag aagaggaaga cagcctcaag 300

agccaagagg gggaaagtgt cacagaagat atcagctttc tagagtctcc 350

aaatccagaa aacaaggact atgaagagcc aaagaaagta cggaaaccag 400
ctttgaccgc cattgaaggc acagcacatg gggagccctg ccacttccct 450

tttcttttcc tagataagga gtatgatgaa tgtacatcag atgggaggga 500

agatggcaga ctgtggtgtg ctacaaccta tgactacaaa gcagatgaaa 550

agtggggctt ttgtgaaact gaagaagagg ctgctaagag acggcagatg 600

caggaagcag aaatgatgta tcaaactgga atgaaaatcc ttaatggaag 650

caataagaaa agccaaaaaa gagaagcata tcggtatctc caaaaggcag 700

caagcatgaa ccataccaaa gccctggaga gagtgtcata tgctctttta 750

tttggtgatt acttgccaca gaatatccag gcagcgagag agatgtttga 800

gaagctgact gaggaaggct ctcccaaggg acagactgct cttggctttc 850

tgtatgcctc tggacttggt gttaattcaa gtcaggcaaa ggctcttgta 900

tattatacat ttggagctct tggggggcaat ctaatagccc acatggtttt 950

ggtaagtaga ctttagtgga aggctaataa tattaacatc agaagaattt 1000
```

32

```
gtggtttata gcggccacaa ctttttcagc tttcatgatc cagatttgct 1050

tgtattaaga ccaaatattc agttgaactt ccttcaaatt cttgttaatg 1100

gatataacac atggaatcta catgtaaatg aaagttggtg gagtccacaa 1150

tttttcttta aaatgattag tttggctgat tgcccctaaa aagagagatc 1200

tgataaatgg ctctttttaa attttctctg agttggaatt gtcagaatca 1250

tttttacat tagattatca taattttaaa aatttttctt tagtttttca 1300

aaattttgta aatggtggct atagaaaaac aacatgaaat attatacaat 1350

attttgcaac aatgccctaa gaattgttaa aattcatgga gttatttgtg 1400

cagaatgact ccagagagct ctactttctg tttttactt ttcatgattg 1450

gctgtcttcc catttattct ggtcatttat tgctagtgac actgtgcctg 1500

cttccagtag tctcattttc cctatttgc taatttgtta ctttttcttt 1550

gctaatttgg aagattaact cattttaat aaaattatgt ctaagattaa 1600

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1650

aaaaaaaaaa aaaaaaaaaa aa 1672
```

<210> 18
<211> 301
<212> PRT
<213> Homo Sapien

<400> 18

```
 Met Arg Val Arg Ile Gly Leu Thr Leu Leu Leu Cys Ala Val Leu
  1               5                  10                  15
 Leu Ser Leu Ala Ser Ala Ser Ser Asp Glu Glu Gly Ser Gln Asp
                  20                  25                  30

 Glu Ser Leu Asp Ser Lys Thr Thr Leu Thr Ser Asp Glu Ser Val
                  35                  40                  45

 Lys Asp His Thr Thr Ala Gly Arg Val Val Ala Gly Gln Ile Phe
                  50                  55                  60

 Leu Asp Ser Glu Glu Ser Glu Leu Glu Ser Ser Ile Gln Glu Glu
                  65                  70                  75

 Glu Asp Ser Leu Lys Ser Gln Glu Gly Glu Ser Val Thr Glu Asp
                  80                  85                  90

 Ile Ser Phe Leu Glu Ser Pro Asn Pro Glu Asn Lys Asp Tyr Glu
                  95                  100                 105

 Glu Pro Lys Lys Val Arg Lys Pro Ala Leu Thr Ala Ile Glu Gly
                  110                 115                 120
```

33

```
Thr Ala His Gly Glu Pro Cys His Phe Pro Phe Leu Phe Leu Asp
                125             130             135

Lys Glu Tyr Asp Glu Cys Thr Ser Asp Gly Arg Glu Asp Gly Arg
                140             145             150

Leu Trp Cys Ala Thr Thr Tyr Asp Tyr Lys Ala Asp Glu Lys Trp
                155             160             165

Gly Phe Cys Glu Thr Glu Glu Glu Ala Ala Lys Arg Arg Gln Met
    .           170             175             180

Gln Glu Ala Glu Met Met Tyr Gln Thr Gly Met Lys Ile Leu Asn
                185             190             195

Gly Ser Asn Lys Lys Ser Gln Lys Arg Glu Ala Tyr Arg Tyr Leu
                200             205             210

Gln Lys Ala Ala Ser Met Asn His Thr Lys Ala Leu Glu Arg Val
                215             220             225

Ser Tyr Ala Leu Leu Phe Gly Asp Tyr Leu Pro Gln Asn Ile Gln
                230             235             240

Ala Ala Arg Glu Met Phe Glu Lys Leu Thr Glu Glu Gly Ser Pro
                245             250             255

Lys Gly Gln Thr Ala Leu Gly Phe Leu Tyr Ala Ser Gly Leu Gly
                260             265             270

Val Asn Ser Ser Gln Ala Lys Ala Leu Val Tyr Tyr Thr Phe Gly
                275             280             285

Ala Leu Gly Gly Asn Leu Ile Ala His Met Val Leu Val Ser Arg
                290             295             300

Leu


<210> 19
<211> 1508
<212> DNA
<213> Homo Sapien

<400> 19
 aattcagatt ttaagcccat tctgcagtgg aatttcatga actagcaaga 50

 ggacaccatc ttcttgtatt atacaagaaa ggagtgtacc tatcacacac 100

 aggggaaaa atgctctttt gggtgctagg cctcctaatc ctctgtggtt 150

 ttctgtggac tcgtaaagga aaactaaaga ttgaagacat cactgataag 200

 tacatttta tcactggatg tgactcgggc tttggaaact ggcagccag 250

 aactttgat aaaaagggat ttcatgtaat cgctgcctgt ctgactgaat 300
```

34

```
caggatcaac agctttaaag gcagaaacct cagagagact tcgtactgtg 350

cttctggatg tgaccgaccc agagaatgtc aagaggactg cccagtgggt 400

gaagaaccaa gttggggaga aaggtctctg gggtctgatc aataatgctg 450

gtgttcccgg cgtgctggct cccactgact ggctgacact agaggactac 500

agagaaccta ttgaagtgaa cctgtttgga ctcatcagtg tgacactaaa 550

tatgcttcct ttggtcaaga aagctcaagg gagagttatt aatgtctcca 600

gtgttggagg tcgccttgca atcgttggag ggggctatac tccatccaaa 650

tatgcagtgg aaggtttcaa tgacagctta agacgggaca tgaaagcttt 700

tggtgtgcac gtctcatgca ttgaaccagg attgttcaaa acaaacttgg 750

cagatccagt aaaggtaatt gaaaaaaaac tcgccatttg ggagcagctg 800

tctccagaca tcaaacaaca atatggagaa ggttacattg aaaaaagtct 850

agacaaactg aaaggcaata aatcctatgt gaacatggac ctctctccgg 900

tggtagagtg catggaccac gctctaacaa gtctcttccc taagactcat 950

tatgccgctg aaaagatgc caaaattttc tggatacctc tgtctcacat 1000

gccagcagct ttgcaagact ttttattgtt gaaacagaaa gcagagctgg 1050

ctaatcccaa ggcagtgtga ctcagctaac cacaaatgtc tcctccaggc 1100

tatgaaattg gccgatttca agaacacatc tccttttcaa ccccattcct 1150

tatctgctcc aacctggact catttagatc gtgcttattt ggattgcaaa 1200

agggagtccc accatcgctg gtggtatccc agggtccctg ctcaagtttt 1250

ctttgaaaag gagggctgga atggtacatc acataggcaa gtcctgccct 1300

gtatttaggc tttgcctgct tggtgtgatg taagggaaat tgaaagactt 1350

gcccattcaa aatgatcttt accgtggcct gccccatgct tatggtcccc 1400

agcatttaca gtaacttgtg aatgttaagt atcatctctt atctaaatat 1450

taaaagataa gtcaacccaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1500

aaaaaaaa 1508
```

<210> 20
<211> 319
<212> PRT
<213> Homo Sapien

<400> 20
Met Leu Phe Trp Val Leu Gly Leu Leu Ile Leu Cys Gly Phe Leu

35

```
1                    5                        10                       15
Trp Thr Arg Lys Gly Lys Leu Lys Ile Glu Asp Ile Thr Asp Lys
                20                      25                      30

Tyr Ile Phe Ile Thr Gly Cys Asp Ser Gly Phe Gly Asn Leu Ala
                35                      40                      45

Ala Arg Thr Phe Asp Lys Lys Gly Phe His Val Ile Ala Ala Cys
                50                      55                      60

Leu Thr Glu Ser Gly Ser Thr Ala Leu Lys Ala Glu Thr Ser Glu
                65                      70                      75

Arg Leu Arg Thr Val Leu Leu Asp Val Thr Asp Pro Glu Asn Val
                80                      85                      90

Lys Arg Thr Ala Gln Trp Val Lys Asn Gln Val Gly Glu Lys Gly
                95                      100                     105

Leu Trp Gly Leu Ile Asn Asn Ala Gly Val Pro Gly Val Leu Ala
                110                     115                     120

Pro Thr Asp Trp Leu Thr Leu Glu Asp Tyr Arg Glu Pro Ile Glu
                125                     130                     135

Val Asn Leu Phe Gly Leu Ile Ser Val Thr Leu Asn Met Leu Pro
                140                     145                     150

Leu Val Lys Lys Ala Gln Gly Arg Val Ile Asn Val Ser Ser Val
                155                     160                     165

Gly Gly Arg Leu Ala Ile Val Gly Gly Gly Tyr Thr Pro Ser Lys
                170                     175                     180

Tyr Ala Val Glu Gly Phe Asn Asp Ser Leu Arg Arg Asp Met Lys
                185                     190                     195

Ala Phe Gly Val His Val Ser Cys Ile Glu Pro Gly Leu Phe Lys
                200                     205                     210

Thr Asn Leu Ala Asp Pro Val Lys Val Ile Glu Lys Lys Leu Ala
                215                     220                     225

Ile Trp Glu Gln Leu Ser Pro Asp Ile Lys Gln Gln Tyr Gly Glu
                230                     235                     240

Gly Tyr Ile Glu Lys Ser Leu Asp Lys Leu Lys Gly Asn Lys Ser
                245                     250                     255

Tyr Val Asn Met Asp Leu Ser Pro Val Val Glu Cys Met Asp His
                260                     265                     270

Ala Leu Thr Ser Leu Phe Pro Lys Thr His Tyr Ala Ala Gly Lys
                275                     280                     285

Asp Ala Lys Ile Phe Trp Ile Pro Leu Ser His Met Pro Ala Ala
```

36

290   295   300
    Leu Gln Asp Phe Leu Leu Leu Lys Gln Lys Ala Glu Leu Ala Asn
                        305   310   315

    Pro Lys Ala Val

<210> 21
<211> 1849
<212> DNA
<213> Homo Sapien

<400> 21
 ctgaggcggc ggtagcatgg aggggggagag tacgtcggcg gtgctctcgg 50

 gctttgtgct cggcgcactc gctttccagc acctcaacac ggactcggac 100

 acggaaggtt ttcttcttgg ggaagtaaaa ggtgaagcca agaacagcat 150

 tactgattcc caaatggatg atgttgaagt tgtttataca attgacattc 200

 agaaatatat tccatgctat cagcttttta gcttttataa ttcttcaggc 250

 gaagtaaatg agcaagcact gaagaaaata ttatcaaatg tcaaaaagaa 300

 tgtggtaggt tggtacaaat tccgtcgtca ttcagatcag atcatgacgt 350

 ttagagagag gctgcttcac aaaaacttgc aggagcattt ttcaaaccaa 400

 gaccttgttt ttctgctatt aacaccaagt ataataacag aaagctgctc 450

 tactcatcga ctggaacatt ccttatataa acctcaaaaa ggactttttc 500

 acagggtacc tttagtggtt gccaatctgg gcatgtctga caactgggt 550

 tataaaactg tatcaggttc ctgtatgtcc actggtttta gccgagcagt 600

 acaaacacac agctctaaat tttttgaaga agatggatcc ttaaaggagg 650

 tacataagat aaatgaaatg tatgcttcat tacaagagga attaaagagt 700

 atatgcaaaa aagtggaaga cagtgaacaa gcagtagata aactagtaaa 750

 ggatgtaaac agattaaaac gagaaattga gaaaggaga ggagcacaga 800

 ttcaggcagc aagagagaag aacatccaaa aagaccctca ggagaacatt 850

 tttctttgtc aggcattacg gacctttttt ccaaattctg aatttcttca 900

 ttcatgtgtt atgtctttaa aaaatagaca tgtttctaaa agtagctgta 950

 actacaacca ccatctcgat gtagtagaca atctgacctt aatggtagaa 1000

 cacactgaca ttcctgaagc tagtccagct agtacaccac aaatcattaa 1050

 gcataaagcc ttagacttag atgacagatg gcaattcaag agatctcggt 1100

                                  37

```
tgttagatac acaagacaaa cgatctaaag caaatactgg tagtagtaac 1150

caagataaag catccaaaat gagcagccca gaaacagatg aagaaattga 1200

aaagatgaag ggttttggtg aatattcacg gtctcctaca ttttgatcct 1250

tttaacctta caaggagatt ttttttatttg gctgatgggt aaagccaaac 1300

atttctattg tttttactat gttgagctac ttgcagtaag ttcatttgtt 1350

tttactatgt tcacctgttt gcagtaatac acagataact cttagtgcat 1400

ttacttcaca aagtactttt tcaaacatca gatgctttta tttccaaacc 1450

ttttttttcac ctttcactaa gttgttgagg ggaaggctta cacagacaca 1500

ttctttagaa ttggaaaagt gagaccaggc acagtggctc acacctgtaa 1550

tcccagcact tagggaagac aagtcaggag gattgattga agctaggagt 1600

tagagaccag cctgggcaac gtattgagac catgtctatt aaaaaataaa 1650

atggaaaagc aagaatagcc ttattttcaa aatatggaaa gaaatttata 1700

tgaaaattta tctgagtcat taaaattctc cttaagtgat actttttttag 1750

aagtacatta tggctagagt tgccagataa aatgctggat atcatgcaat 1800

aaatttgcaa aacatcatct aaaatttaaa aaaaaaaaaa aaaaaaaaa 1849
```

<210> 22
<211> 409
<212> PRT
<213> Homo Sapien

<400> 22

```
 Met Glu Gly Glu Ser Thr Ser Ala Val Leu Ser Gly Phe Val Leu
  1               5                  10                  15

 Gly Ala Leu Ala Phe Gln His Leu Asn Thr Asp Ser Asp Thr Glu
                  20                  25                  30

 Gly Phe Leu Leu Gly Glu Val Lys Gly Glu Ala Lys Asn Ser Ile
                  35                  40                  45

 Thr Asp Ser Gln Met Asp Asp Val Glu Val Val Tyr Thr Ile Asp
                  50                  55                  60

 Ile Gln Lys Tyr Ile Pro Cys Tyr Gln Leu Phe Ser Phe Tyr Asn
                  65                  70                  75
 Ser Ser Gly Glu Val Asn Glu Gln Ala Leu Lys Lys Ile Leu Ser
                  80                  85                  90

 Asn Val Lys Lys Asn Val Val Gly Trp Tyr Lys Phe Arg Arg His
                  95                 100                 105
```

38

Ser Asp Gln Ile Met Thr Phe Arg Glu Arg Leu Leu His Lys Asn
                110   115   120

Leu Gln Glu His Phe Ser Asn Gln Asp Leu Val Phe Leu Leu Leu
                125   130   135

Thr Pro Ser Ile Ile Thr Glu Ser Cys Ser Thr His Arg Leu Glu
                140   145   150

His Ser Leu Tyr Lys Pro Gln Lys Gly Leu Phe His Arg Val Pro
                155   160   165

Leu Val Val Ala Asn Leu Gly Met Ser Glu Gln Leu Gly Tyr Lys
                170   175   180

Thr Val Ser Gly Ser Cys Met Ser Thr Gly Phe Ser Arg Ala Val
                185   190   195

Gln Thr His Ser Ser Lys Phe Phe Glu Glu Asp Gly Ser Leu Lys
                200   205   210

Glu Val His Lys Ile Asn Glu Met Tyr Ala Ser Leu Gln Glu Glu
                215   220   225

Leu Lys Ser Ile Cys Lys Lys Val Glu Asp Ser Glu Gln Ala Val
                230   235   240

Asp Lys Leu Val Lys Asp Val Asn Arg Leu Lys Arg Glu Ile Glu
                245   250   255

Lys Arg Arg Gly Ala Gln Ile Gln Ala Ala Arg Glu Lys Asn Ile
                260   265   270

Gln Lys Asp Pro Gln Glu Asn Ile Phe Leu Cys Gln Ala Leu Arg
                275   280   285

Thr Phe Phe Pro Asn Ser Glu Phe Leu His Ser Cys Val Met Ser
                290   295   300

Leu Lys Asn Arg His Val Ser Lys Ser Ser Cys Asn Tyr Asn His
                305   310   315

His Leu Asp Val Val Asp Asn Leu Thr Leu Met Val Glu His Thr
                320   325   330

Asp Ile Pro Glu Ala Ser Pro Ala Ser Thr Pro Gln Ile Ile Lys
                335   340   345

His Lys Ala Leu Asp Leu Asp Asp Arg Trp Gln Phe Lys Arg Ser
                350   355   360

Arg Leu Leu Asp Thr Gln Asp Lys Arg Ser Lys Ala Asn Thr Gly
                365   370   375

Ser Ser Asn Gln Asp Lys Ala Ser Lys Met Ser Ser Pro Glu Thr
                380   385   390

39

Asp Glu Glu Ile Glu Lys Met Lys Gly Phe Gly Glu Tyr Ser Arg
          395   400   405

Ser Pro Thr Phe

<210> 23
<211> 2651
<212> DNA
<213> Homo Sapien

<400> 23
 ggcacagccg cgcggcggag ggcagagtca gccgagccga gtccagccgg 50

 acgagcggac cagcgcaggg cagcccaagc agcgcgcagc gaacgcccgc 100

 cgccgcccac accctctgcg gtccccgcgg cgcctgccac ccttccctcc 150

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 ccgcgaaacc ccgaggtcac cagcccgcgc ctctgcttcc ctgggccgcg 250

 cgccgcctcc acgccctcct tctcccctgg cccggcgcct ggcaccgggg 300

 accgttgcct gacgcgaggc ccagctctac ttttcgcccc gcgtctcctc 350

 cgcctgctcg cctcttccac caactccaac tccttctccc tccagctcca 400

 ctcgctagtc cccgactccg ccagccctcg gcccgctgcc gtagcgccgc 450

 ttcccgtccg gtcccaaagg tgggaacgcg tccgccccgg cccgcaccat 500

 ggcacggttc ggcttgcccg cgcttctctg caccctggca gtgctcagcg 550

 ccgcgctgct ggctgccgag ctcaagtcga aaagttgctc ggaagtgcga 600

 cgtctttacg tgtccaaagg cttcaacaag aacgatgccc ccctccacga 650

 gatcaacggt gatcatttga agatctgtcc ccagggttct acctgctgct 700

 ctcaagagat ggaggagaag tacagcctgc aaagtaaaga tgatttcaaa 750

 agtgtggtca gcgaacagtg caatcatttg caagctgtct ttgcttcacg 800

 ttacaagaag tttgatgaat tcttcaaaga actacttgaa aatgcagaga 850

 aatccctgaa tgatatgttt gtgaagacat atggccattt atacatgcaa 900

 aattctgagc tatttaaaga tctcttcgta gagttgaaac gttactacgt 950

 ggtgggaaat gtgaacctgg aagaaatgct aaatgacttc tgggctcgcc 1000

 tcctggagcg gatgttccgc ctggtgaact cccagtacca ctttacagat 1050

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 agatgtccct cgcaaattga agctccaggt tactcgtgct tttgtagcag 1150

40

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cccgtacttt cgctcaaggc ttagcggttg cgggagatgt cgtgagcaag 1200

gtctccgtgg taaaccccac agcccagtgt acccatgccc tgttgaagat 1250

gatctactgc tcccactgcc ggggtctcgt gactgtgaag ccatgttaca 1300

actactgctc aaacatcatg agaggctgtt tggccaacca aggggatctc 1350

gattttgaat ggaacaattt catagatgct atgctgatgg tggcagagag 1400

gctagagggt cctttcaaca ttgaatcggt catggatccc atcgatgtga 1450

agatttctga tgctattatg aacatgcagg ataatagtgt tcaagtgtct 1500

cagaaggttt tccagggatg tggaccccCC aagcccctcc cagctggacg 1550

aatttctcgt tccatctctg aaagtgcctt cagtgctcgc ttcagaccac 1600

atcaccccga ggaacgccca accacagcag ctggcactag tttggaccga 1650

ctggttactg atgtcaagga gaaactgaaa caggccaaga aattctggtc 1700

ctcccttccg agcaacgttt gcaacgatga gaggatggct gcaggaaacg 1750

gcaatgagga tgactgttgg aatgggaaag gcaaaagcag gtacctgttt 1800

gcagtgacag gaaatggatt agccaaccag ggcaacaacc cagaggtcca 1850

ggttgacacc agcaaaccag acatactgat ccttcgtcaa atcatggctc 1900

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gacttctttg atatcagtga tgaaagtagt ggagaaggaa gtggaagtgg 2000

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ggggcacagg cctacctcct cactgtcttc tgcatcttgt tcctggttat 2150

gcagagagag tggagataat tctcaaactc tgagaaaaag tgttcatcaa 2200

aaagttaaaa ggcaccagtt atcacttttc taccatccta gtgactttgc 2250

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tttaagaagt gctgactttg ttttctcatt cagttttggg aggaaaaggg 2350

actgtgcatt gagttggttc ctgctccccc aaaccatgtt aaacgtggct 2400

aacagtgtag gtacagaact atagttagtt gtgcatttgt gattttatca 2450

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tttccaactg tgatctcgcc ttgtttctta caagcaaacc agggtccctt 2550

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41

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  c 2651

<210> 24
<211> 556
<212> PRT
<213> Homo Sapien

<400> 24
 Met Ala Arg Phe Gly Leu Pro Ala Leu Leu Cys Thr Leu Ala Val
  1               5                  10                  15


 Leu Ser Ala Ala Leu Leu Ala Ala Glu Leu Lys Ser Lys Ser Cys
                 20                  25                  30


 Ser Glu Val Arg Arg Leu Tyr Val Ser Lys Gly Phe Asn Lys Asn
                 35                  40                  45


 Asp Ala Pro Leu His Glu Ile Asn Gly Asp His Leu Lys Ile Cys
                 50                  55                  60


 Pro Gln Gly Ser Thr Cys Cys Ser Gln Glu Met Glu Glu Lys Tyr
                 65                  70                  75


 Ser Leu Gln Ser Lys Asp Asp Phe Lys Ser Val Val Ser Glu Gln
                 80                  85                  90


 Cys Asn His Leu Gln Ala Val Phe Ala Ser Arg Tyr Lys Lys Phe
                 95                 100                 105


 Asp Glu Phe Phe Lys Glu Leu Leu Glu Asn Ala Glu Lys Ser Leu
                110                 115                 120


 Asn Asp Met Phe Val Lys Thr Tyr Gly His Leu Tyr Met Gln Asn
                125                 130                 135


 Ser Glu Leu Phe Lys Asp Leu Phe Val Glu Leu Lys Arg Tyr Tyr
                140                 145                 150


 Val Val Gly Asn Val Asn Leu Glu Glu Met Leu Asn Asp Phe Trp
                155                 160                 165


 Ala Arg Leu Leu Glu Arg Met Phe Arg Leu Val Asn Ser Gln Tyr
                170                 175                 180


 His Phe Thr Asp Glu Tyr Leu Glu Cys Val Ser Lys Tyr Thr Glu
                185                 190                 195


 Gln Leu Lys Pro Phe Gly Asp Val Pro Arg Lys Leu Lys Leu Gln
                200                 205                 210


 Val Thr Arg Ala Phe Val Ala Ala Arg Thr Phe Ala Gln Gly Leu
                215                 220                 225


 Ala Val Ala Gly Asp Val Val Ser Lys Val Ser Val Val Asn Pro
```

Thr Ala Gln Cys Thr His Ala Leu Leu Lys Met Ile Tyr Cys Ser
             245   250   255

His Cys Arg Gly Leu Val Thr Val Lys Pro Cys Tyr Asn Tyr Cys
             260   265   270

Ser Asn Ile Met Arg Gly Cys Leu Ala Asn Gln Gly Asp Leu Asp
             275   280   285

Phe Glu Trp Asn Asn Phe Ile Asp Ala Met Leu Met Val Ala Glu
             290   295   300

Arg Leu Glu Gly Pro Phe Asn Ile Glu Ser Val Met Asp Pro Ile
             305   310   315

Asp Val Lys Ile Ser Asp Ala Ile Met Asn Met Gln Asp Asn Ser
             320   325   330

Val Gln Val Ser Gln Lys Val Phe Gln Gly Cys Gly Pro Pro Lys
             335   340   345

Pro Leu Pro Ala Gly Arg Ile Ser Arg Ser Ile Ser Glu Ser Ala
             350   355   360

Phe Ser Ala Arg Phe Arg Pro His His Pro Glu Glu Arg Pro Thr
             365   370   375

Thr Ala Ala Gly Thr Ser Leu Asp Arg Leu Val Thr Asp Val Lys
             380   385   390

Glu Lys Leu Lys Gln Ala Lys Lys Phe Trp Ser Ser Leu Pro Ser
             395   400   405

Asn Val Cys Asn Asp Glu Arg Met Ala Ala Gly Asn Gly Asn Glu
             410   415   420

Asp Asp Cys Trp Asn Gly Lys Gly Lys Ser Arg Tyr Leu Phe Ala
             425   430   435

Val Thr Gly Asn Gly Leu Ala Asn Gln Gly Asn Asn Pro Glu Val
             440   445   450

Gln Val Asp Thr Ser Lys Pro Asp Ile Leu Ile Leu Arg Gln Ile
             455   460   465

Met Ala Leu Arg Val Met Thr Ser Lys Met Lys Asn Ala Tyr Asn
             470   475   480

Gly Asn Asp Val Asp Phe Phe Asp Ile Ser Asp Glu Ser Ser Gly
             485   490   495

Glu Gly Ser Gly Ser Gly Cys Glu Tyr Gln Gln Cys Pro Ser Glu
             500   505   510

Phe Asp Tyr Asn Ala Thr Asp His Ala Gly Lys Ser Ala Asn Glu

```
                 515                  520                  525
Lys Ala Asp Ser Ala Gly Val Arg Pro Gly Ala Gln Ala Tyr Leu
                530                  535                  540

Leu Thr Val Phe Cys Ile Leu Phe Leu Val Met Gln Arg Glu Trp
                545                  550                  555

Arg
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<210> 25
<211> 870
<212> DNA
<213> Homo Sapien

<400> 25
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gctgagtatc ctgacctgag tcatccccag ggatcaggag cctccagcag  100

ggaaccttcc attatattct tcaagcaact tacagctgca ccgacagttg  150

cgatgaaagt tctaatctct tccctcctcc tgttgctgcc actaatgctg  200

atgtccatgg tctctagcag cctgaatcca ggggtcgcca gaggccacag  250

ggaccgaggc caggcttcta ggagatggct ccaggaaggc ggccaagaat  300

gtgagtgcaa agattggttc ctgagagccc cgagaagaaa attcatgaca  350

gtgtctgggc tgccaaagaa gcagtgcccc tgtgatcatt tcaagggcaa  400

tgtgaagaaa acaagacacc aaaggcacca cagaaagcca aacaagcatt  450

ccagagcctg ccagcaattt ctcaaacaat gtcagctaag aagctttgct  500

ctgcctttgt aggagctctg agcgcccact cttccaatta aacattctca  550

gccaagaaga cagtgagcac acctaccaga cactcttctt ctcccacctc  600

actctcccac tgtacccacc cctaaatcat tccagtgctc tcaaaaagca  650

tgtttttcaa gatcattttg tttgttgctc tctctagtgt cttcttctct  700

cgtcagtctt agcctgtgcc ctccccttac ccaggcttag gcttaattac  750

ctgaaagatt ccaggaaact gtagcttcct agctagtgtc atttaacctt  800

aaatgcaatc aggaaagtag caaacagaag tcaataaata tttttaaatg  850

tcaaaaaaaa aaaaaaaaaa  870
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<210> 26
<211> 119
<212> PRT
<213> Homo Sapien

<400> 26
Met Lys Val Leu Ile Ser Ser Leu Leu Leu Leu Leu Pro Leu Met
1   5   10   15

Leu Met Ser Met Val Ser Ser Ser Leu Asn Pro Gly Val Ala Arg
                20   25   30

Gly His Arg Asp Arg Gly Gln Ala Ser Arg Arg Trp Leu Gln Glu
                35   40   45

Gly Gly Gln Glu Cys Glu Cys Lys Asp Trp Phe Leu Arg Ala Pro
                50   55   60
Arg Arg Lys Phe Met Thr Val Ser Gly Leu Pro Lys Lys Gln Cys
                65   70   75

Pro Cys Asp His Phe Lys Gly Asn Val Lys Lys Thr Arg His Gln
                80   85   90

Arg His His Arg Lys Pro Asn Lys His Ser Arg Ala Cys Gln Gln
                95   100   105

Phe Leu Lys Gln Cys Gln Leu Arg Ser Phe Ala Leu Pro Leu
                110   115

<210> 27
<211> 1371
<212> DNA
<213> Homo Sapien

<400> 27
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ggaagcacag ctcagagctg gtctgccatg gacatcctgg tcccactcct 100

gcagctgctg gtgctgcttc ttaccctgcc cctgcacctc atggctctgc 150

tgggctgctg gcagcccctg tgcaaaagct acttccccta cctgatggcc 200

gtgctgactc ccaagagcaa ccgcaagatg gagagcaaga aacgggagct 250

cttcagccag ataaaggggc ttacaggagc ctccgggaaa gtggccctac 300

tggagctggg ctgcggaacc ggagccaact ttcagttcta cccaccgggc 350

tgcagggtca cctgcctaga cccaaatccc cactttgaga agttcctgac 400

aaagagcatg gctgagaaca ggcacctcca atatgagcgg tttgtggtgg 450

ctcctggaga ggacatgaga cagctggctg atggctccat ggatgtggtg 500

gtctgcactc tggtgctgtg ctctgtgcag agcccaagga aggtcctgca 550

ggaggtccgg agagtactga gaccgggagg tgtgctcttt ttctgggagc 600

atgtggcaga accatatgga agctgggcct tcatgtggca gcaagttttc 650

gagcccacct ggaaacacat ggggatggc tgctgcctca ccagagagac 700

45

```
ctggaaggat cttgagaacg cccagttctc cgaaatccaa atggaacgac 750

agcccctcc cttgaagtgg ctacctgttg ggccccacat catgggaaag 800

gctgtcaaac aatctttccc aagctccaag gcactcattt gctccttccc 850

cagcctccaa ttagaacaag ccacccacca gcctatctat cttccactga 900

gagggaccta gcagaatgag agaagacatt catgtaccac ctactagtcc 950

ctctctcccc aacctctgcc agggcaatct ctaacttcaa tcccgccttc 1000

gacagtgaaa aagctctact tctacgctga cccagggagg aaacactagg 1050

accctgttgt atcctcaact gcaagtttct ggactagtct cccaacgttt 1100

gcctcccaat gttgtccctt tccttcgttc ccatggtaaa gctcctctcg 1150

ctttcctcct gaggctacac ccatgcgtct ctaggaactg gtcacaaaag 1200

tcatggtgcc tgcatccctg ccaagccccc ctgaccctct ctccccacta 1250

ccaccttctt cctgagctgg gggcaccagg gagaatcaga gatgctgggg 1300

atgccagagc aagactcaaa gaggcagagg ttttgttctc aaatattttt 1350

taataaatag acgaaccac g 1371
```

<210> 28
<211> 277
<212> PRT
<213> Homo Sapien

<400> 28
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Met Asp Ile Leu Val Pro Leu Leu Gln Leu Leu Val Leu Leu Leu
 1               5                  10                  15

Thr Leu Pro Leu His Leu Met Ala Leu Leu Gly Cys Trp Gln Pro
                20                  25                  30

Leu Cys Lys Ser Tyr Phe Pro Tyr Leu Met Ala Val Leu Thr Pro
                35                  40                  45

Lys Ser Asn Arg Lys Met Glu Ser Lys Lys Arg Glu Leu Phe Ser
                50                  55                  60

Gln Ile Lys Gly Leu Thr Gly Ala Ser Gly Lys Val Ala Leu Leu
                65                  70                  75

Glu Leu Gly Cys Gly Thr Gly Ala Asn Phe Gln Phe Tyr Pro Pro
                80                  85                  90

Gly Cys Arg Val Thr Cys Leu Asp Pro Asn Pro His Phe Glu Lys
                95                 100                 105

Phe Leu Thr Lys Ser Met Ala Glu Asn Arg His Leu Gln Tyr Glu
```

46
```

Arg Phe Val Val Ala Pro Gly Glu Asp Met Arg Gln Leu Ala Asp
                125   130   135

Gly Ser Met Asp Val Val Val Cys Thr Leu Val Leu Cys Ser Val
                140   145   150

Gln Ser Pro Arg Lys Val Leu Gln Glu Val Arg Arg Val Leu Arg
                155   160   165

Pro Gly Gly Val Leu Phe Phe Trp Glu His Val Ala Glu Pro Tyr
                170   175   180

Gly Ser Trp Ala Phe Met Trp Gln Gln Val Phe Glu Pro Thr Trp
                185   190   195

Lys His Ile Gly Asp Gly Cys Cys Leu Thr Arg Glu Thr Trp Lys
                200   205   210

Asp Leu Glu Asn Ala Gln Phe Ser Glu Ile Gln Met Glu Arg Gln
                215   220   225

Pro Pro Pro Leu Lys Trp Leu Pro Val Gly Pro His Ile Met Gly
                230   235   240

Lys Ala Val Lys Gln Ser Phe Pro Ser Ser Lys Ala Leu Ile Cys
                245   250   255

Ser Phe Pro Ser Leu Gln Leu Glu Gln Ala Thr His Gln Pro Ile
                260   265   270

Tyr Leu Pro Leu Arg Gly Thr
                275

<210> 29
<211> 494
<212> DNA
<213> Homo Sapien

<400> 29
 caatgtttgc ctatccacct cccccaagcc cctttaccta tgctgctgct 50

 aacgctgctg ctgctgctgc tgctgcttaa aggctcatgc ttggagtggg 100

 gactggtcgg tgcccagaaa gtctcttctg ccactgacgc ccccatcagg 150

 gattgggcct tctttccccc ttcctttctg tgtctcctgc ctcatcggcc 200

 tgccatgacc tgcagccaag cccagccccg tggggaaggg gagaaagtgg 250

 gggatggcta agaaagctgg gagataggga acagaagagg gtagtgggtg 300

 ggctagggg gctgccttat ttaaagtggt tgtttatgat tcttatacta 350

 atttatacaa agatattaag gccctgttca ttaagaaatt gttcccttcc 400

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cctgtgttca atgtttgtaa agattgttct gtgtaaatat gtctttataa 450

taaacagtta aaagctgaaa aaaaaaaaaa aaaaaaaaaa aaaa 494
```

<210> 30
<211> 73
<212> PRT
<213> Homo Sapien

<400> 30
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Met Leu Leu Leu Thr Leu Leu Leu Leu Leu Leu Leu Leu Lys Gly
  1               5                  10                  15

Ser Cys Leu Glu Trp Gly Leu Val Gly Ala Gln Lys Val Ser Ser
                20                  25                  30

Ala Thr Asp Ala Pro Ile Arg Asp Trp Ala Phe Phe Pro Pro Ser
                35                  40                  45

Phe Leu Cys Leu Leu Pro His Arg Pro Ala Met Thr Cys Ser Gln
                50                  55                  60

Ala Gln Pro Arg Gly Glu Gly Glu Lys Val Gly Asp Gly
                65                  70
```

<210> 31
<211> 1660
<212> DNA
<213> Homo Sapien

<400> 31
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gtttgaattc cttcaactat acccacagtc caaaagcaga ctcactgtgt 50

cccaggctac cagttcctcc aagcaagtca tttcccttat ttaaccgatg 100

tgtccctcaa acacctgagt gctactccct atttgcatct gttttgataa 150

atgatgttga caccctccac cgaattctaa gtggaatcat gtcgggaaga 200

gatacaatcc ttggcctgtg tatcctcgca ttagccttgt ctttggccat 250

gatgtttacc ttcagattca tcaccaccct tctggttcac attttcattt 300

cattggttat tttgggattg ttgtttgtct gcggtgtttt atggtggctg 350

tattatgact ataccaacga cctcagcata gaattggaca cagaaaggga 400

aaatatgaag tgcgtgctgg ggtttgctat cgtatccaca ggcatcacgg 450

cagtgctgct cgtcttgatt tttgttctca gaaagagaat aaaattgaca 500

gttgagcttt tccaaatcac aaataaagcc atcagcagtg ctcccttcct 550

gctgttccag ccactgtgga catttgccat cctcattttc ttctgggtcc 600

tctgggtggc tgtgctgctg agcctgggaa ctgcaggagc tgcccaggtt 650

atggaaggcg gccaagtgga atataagccc ctttcgggca ttcggtacat 700
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gtggtcgtac catttaattg gcctcatctg gactagtgaa ttcatccttg 750

cgtgccagca aatgactata gctggggcag tggttacttg ttatttcaac 800

agaagtaaaa atgatcctcc tgatcatccc atcctttcgt ctctctccat 850

tctcttcttc taccatcaag gaaccgttgt gaaagggtca tttttaatct 900

ctgtggtgag gattccgaga atcattgtca tgtacatgca aaacgcactg 950

aaagaacagc agcatggtgc attgtccagg tacctgttcc gatgctgcta 1000

ctgctgtttc tggtgtcttg acaaatacct gctccatctc aaccagaatg 1050

catatactac aactgctatt aatgggacag atttctgtac atcagcaaaa 1100

gatgcattca aaatcttgtc caagaactca agtcacttta catctattaa 1150

ctgctttgga gacttcataa tttttctagg aaaggtgtta gtggtgtgtt 1200

tcactgtttt tggaggactc atggctttta actacaatcg ggcattccag 1250

gtgtgggcag tccctctgtt attggtagct ttttttgcct acttagtagc 1300
ccatagtttt ttatctgtgt ttgaaactgt gctggatgca cttttcctgt 1350

gttttgctgt tgatctggaa acaaatgatg gatcgtcaga aaagccctac 1400

tttatggatc aagaatttct gagtttcgta aaaaggagca caaaattaaa 1450

caatgcaagg gcacagcagg acaagcactc attaaggaat gaggagggaa 1500

cagaactcca ggccattgtg agatagatac ccatttaggt atctgtacct 1550

ggaaaacatt tccttctaag agccatttac agaatagaag atgagaccac 1600

tagagaaaag ttagtgaatt tttttttaaa agacctaata aaccctattc 1650

ttcctcaaaa 1660
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<210> 32
<211> 445
<212> PRT
<213> Homo Sapien

<400> 32
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 Met Ser Gly Arg Asp Thr Ile Leu Gly Leu Cys Ile Leu Ala Leu
  1               5                  10                  15


 Ala Leu Ser Leu Ala Met Met Phe Thr Phe Arg Phe Ile Thr Thr
                 20                  25                  30


 Leu Leu Val His Ile Phe Ile Ser Leu Val Ile Leu Gly Leu Leu
                 35                  40                  45


 Phe Val Cys Gly Val Leu Trp Trp Leu Tyr Tyr Asp Tyr Thr Asn
                 50                  55                  60
```

49

```
Asp Leu Ser Ile Glu Leu Asp Thr Glu Arg Glu Asn Met Lys Cys
              65                      70                      75

Val Leu Gly Phe Ala Ile Val Ser Thr Gly Ile Thr Ala Val Leu
              80                      85                      90

Leu Val Leu Ile Phe Val Leu Arg Lys Arg Ile Lys Leu Thr Val
              95                     100                     105

Glu Leu Phe Gln Ile Thr Asn Lys Ala Ile Ser Ser Ala Pro Phe
             110                     115                     120

Leu Leu Phe Gln Pro Leu Trp Thr Phe Ala Ile Leu Ile Phe Phe
             125                     130                     135

Trp Val Leu Trp Val Ala Val Leu Leu Ser Leu Gly Thr Ala Gly
             140                     145                     150

Ala Ala Gln Val Met Glu Gly Gly Gln Val Glu Tyr Lys Pro Leu
             155                     160                     165

Ser Gly Ile Arg Tyr Met Trp Ser Tyr His Leu Ile Gly Leu Ile
             170                     175                     180

Trp Thr Ser Glu Phe Ile Leu Ala Cys Gln Gln Met Thr Ile Ala
             185                     190                     195
Gly Ala Val Val Thr Cys Tyr Phe Asn Arg Ser Lys Asn Asp Pro
             200                     205                     210

Pro Asp His Pro Ile Leu Ser Ser Leu Ser Ile Leu Phe Phe Tyr
             215                     220                     225

His Gln Gly Thr Val Val Lys Gly Ser Phe Leu Ile Ser Val Val
             230                     235                     240

Arg Ile Pro Arg Ile Ile Val Met Tyr Met Gln Asn Ala Leu Lys
             245                     250                     255

Glu Gln Gln His Gly Ala Leu Ser Arg Tyr Leu Phe Arg Cys Cys
             260                     265                     270

Tyr Cys Cys Phe Trp Cys Leu Asp Lys Tyr Leu Leu His Leu Asn
             275                     280                     285

Gln Asn Ala Tyr Thr Thr Thr Ala Ile Asn Gly Thr Asp Phe Cys
             290                     295                     300

Thr Ser Ala Lys Asp Ala Phe Lys Ile Leu Ser Lys Asn Ser Ser
             305                     310                     315

His Phe Thr Ser Ile Asn Cys Phe Gly Asp Phe Ile Ile Phe Leu
             320                     325                     330

Gly Lys Val Leu Val Val Cys Phe Thr Val Phe Gly Gly Leu Met
             335                     340                     345
```

```
Ala Phe Asn Tyr Asn Arg Ala Phe Gln Val Trp Ala Val Pro Leu
            350                 355                 360

Leu Leu Val Ala Phe Phe Ala Tyr Leu Val Ala His Ser Phe Leu
            365                 370                 375

Ser Val Phe Glu Thr Val Leu Asp Ala Leu Phe Leu Cys Phe Ala
            380                 385                 390

Val Asp Leu Glu Thr Asn Asp Gly Ser Ser Glu Lys Pro Tyr Phe
            395                 400                 405

Met Asp Gln Glu Phe Leu Ser Phe Val Lys Arg Ser Asn Lys Leu
            410                 415                 420

Asn Asn Ala Arg Ala Gln Gln Asp Lys His Ser Leu Arg Asn Glu
            425                 430                 435

Glu Gly Thr Glu Leu Gln Ala Ile Val Arg
            440                 445
```

<210> 33
<211> 2773
<212> DNA
<213> Homo Sapien

<400> 33
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 tgtttcttcc ttagaataat ttgtatggga tttgtgatgc aggaaagcct 100
 aagggaaaaa gaatattcat tctgtgtggt gaaaattttt tgaaaaaaaa 150

 attgccttct tcaaacaagg gtgtcattct gatatttatg aggactgttg 200

 ttctcactat gaaggcatct gttattgaaa tgttccttgt tttgctggtg 250

 actggagtac attcaaacaa agaaacggca aagaagatta aaaggcccaa 300

 gttcactgtg cctcagatca actgcgatgt caaagccgga aagatcatcg 350

 atcctgagtt cattgtgaaa tgtccagcag gatgccaaga ccccaaatac 400

 catgtttatg gcactgacgt gtatgcatcc tactccagtg tgtgtggcgc 450

 tgccgtacac agtggtgtgc ttgataattc aggagggaaa atacttgttc 500

 ggaaggttgc tggacagtct ggttacaaag ggagttattc caacggtgtc 550

 caatcgttat ccctaccacg atggagagaa tcctttatcg tcttagaaag 600

 taaacccaaa aagggtgtaa cctacccatc agctcttaca tactcatcat 650

 cgaaaagtcc agctgcccaa gcaggtgaga ccacaaaagc ctatcagagg 700

 ccacctattc cagggacaac tgcacagccg gtcactctga tgcagcttct 750

 ggctgtcact gtagctgtgg ccacccccac caccttgcca aggccatccc 800
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51

cttctgctgc ttctaccacc agcatcccca gaccacaatc agtgggccac 850

aggagccagg agatggatct ctggtccact gccacctaca caagcagcca 900

aaacaggccc agagctgatc caggtatcca aaggcaagat ccttcaggag 950

ctgccttcca gaaacctgtt ggagcggatg tcagcctggg acttgttcca 1000

aaagaagaat tgagcacaca gtctttggag ccagtatccc tgggagatcc 1050

aaactgcaaa attgacttgt cgtttttaat tgatgggagc accagcattg 1100

gcaaacggcg attccgaatc cagaagcagc tcctggctga tgttgcccaa 1150

gctcttgaca ttggccctgc cggtccactg atgggtgttg tccagtatgg 1200

agacaaccct gctactcact ttaacctcaa gacacacacg aattctcgag 1250

atctgaagac agccatagag aaaattactc agagaggagg actttctaat 1300

gtaggtcggg ccatctcctt tgtgaccaag aacttctttt ccaaagccaa 1350

tggaaacaga agcggggctc ccaatgtggt ggtggtgatg gtggatggct 1400

ggcccacgga caaagtggag gaggcttcaa gacttgcgag agagtcagga 1450

atcaacattt tcttcatcac cattgaaggt gctgctgaaa atgagaagca 1500

gtatgtggtg gagcccaact ttgcaaacaa ggccgtgtgc agaacaaacg 1550

gcttctactc gctccacgtg cagagctggt ttggcctcca caagaccctg 1600

cagcctctgg tgaagcgggt ctgcgacact gaccgcctgg cctgcagcaa 1650

gacctgcttg aactcggctg acattggctt cgtcatcgac ggctccagca 1700

gtgtggggac gggcaacttc cgcaccgtcc tccagtttgt gaccaacctc 1750

accaaagagt ttgagatttc cgacacggac acgcgcatcg gggccgtgca 1800

gtacacctac gaacagcggc tggagtttgg gttcgacaag tacagcagca 1850

agcctgacat cctcaacgcc atcaagaggg tgggctactg gagtggtggc 1900

accagcacgg gggctgccat caacttcgcc ctggagcagc tcttcaagaa 1950

gtccaagccc aacaagagga agttaatgat cctcatcacc gacgggaggt 2000

cctacgacga cgtccggatc ccagccatgg ctgcccatct gaagggagtg 2050

atcacctatg cgataggcgt tgcctgggct gcccaagagg agctagaagt 2100

cattgccact caccccgcca gagaccactc cttctttgtg gacgagtttg 2150

acaacctcca tcagtatgtc cccaggatca tccagaacat ttgtacagag 2200

52

```
ttcaactcac agcctcggaa ctgaattcag agcaggcaga gcaccagcaa 2250

gtgctgcttt actaactgac gtgttggacc accccaccgc ttaatggggc 2300

acgcacggtg catcaagtct tgggcagggc atggagaaac aaatgtcttg 2350

ttattattct ttgccatcat gcttttttcat attccaaaac ttggagttac 2400

aaagatgatc acaaacgtat agaatgagcc aaaaggctac atcatgttga 2450

gggtgctgga gattttacat tttgacaatt gttttcaaaa taaatgttcg 2500

gaatacagtg cagcccttac gacaggctta cgtagagctt ttgtgagatt 2550

tttaagttgt tatttctgat ttgaactctg taaccctcag caagtttcat 2600

ttttgtcatg acaatgtagg aattgctgaa ttaaatgttt agaaggatga 2650

aaaataaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2700

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2750

aaaaaaaaaa aaaaaaaaaa aag 2773
```

<210> 34
<211> 678
<212> PRT
<213> Homo Sapien

<400> 34

```
Met Arg Thr Val Val Leu Thr Met Lys Ala Ser Val Ile Glu Met
 1               5                  10                  15

Phe Leu Val Leu Leu Val Thr Gly Val His Ser Asn Lys Glu Thr
                20                  25                  30

Ala Lys Lys Ile Lys Arg Pro Lys Phe Thr Val Pro Gln Ile Asn
                35                  40                  45

Cys Asp Val Lys Ala Gly Lys Ile Ile Asp Pro Glu Phe Ile Val
                50                  55                  60

Lys Cys Pro Ala Gly Cys Gln Asp Pro Lys Tyr His Val Tyr Gly
                65                  70                  75

Thr Asp Val Tyr Ala Ser Tyr Ser Ser Val Cys Gly Ala Ala Val
                80                  85                  90

His Ser Gly Val Leu Asp Asn Ser Gly Gly Lys Ile Leu Val Arg
                95                  100                 105

Lys Val Ala Gly Gln Ser Gly Tyr Lys Gly Ser Tyr Ser Asn Gly
                110                 115                 120

Val Gln Ser Leu Ser Leu Pro Arg Trp Arg Glu Ser Phe Ile Val
                125                 130                 135
```

53

```
Leu Glu Ser Lys Pro Lys Lys Gly Val Thr Tyr Pro Ser Ala Leu
            140                 145                 150

Thr Tyr Ser Ser Ser Lys Ser Pro Ala Ala Gln Ala Gly Glu Thr
            155                 160                 165

Thr Lys Ala Tyr Gln Arg Pro Pro Ile Pro Gly Thr Thr Ala Gln
            170                 175                 180

Pro Val Thr Leu Met Gln Leu Leu Ala Val Thr Val Ala Val Ala
            185                 190                 195

Thr Pro Thr Thr Leu Pro Arg Pro Ser Pro Ser Ala Ala Ser Thr
            200                 205                 210

Thr Ser Ile Pro Arg Pro Gln Ser Val Gly His Arg Ser Gln Glu
            215                 220                 225

Met Asp Leu Trp Ser Thr Ala Thr Tyr Thr Ser Ser Gln Asn Arg
            230                 235                 240

Pro Arg Ala Asp Pro Gly Ile Gln Arg Gln Asp Pro Ser Gly Ala
            245                 250                 255

Ala Phe Gln Lys Pro Val Gly Ala Asp Val Ser Leu Gly Leu Val
            260                 265                 270

Pro Lys Glu Glu Leu Ser Thr Gln Ser Leu Glu Pro Val Ser Leu
            275                 280                 285

Gly Asp Pro Asn Cys Lys Ile Asp Leu Ser Phe Leu Ile Asp Gly
            290                 295                 300

Ser Thr Ser Ile Gly Lys Arg Arg Phe Arg Ile Gln Lys Gln Leu
            305                 310                 315

Leu Ala Asp Val Ala Gln Ala Leu Asp Ile Gly Pro Ala Gly Pro
            320                 325                 330

Leu Met Gly Val Val Gln Tyr Gly Asp Asn Pro Ala Thr His Phe
            335                 340                 345

Asn Leu Lys Thr His Thr Asn Ser Arg Asp Leu Lys Thr Ala Ile
            350                 355                 360

Glu Lys Ile Thr Gln Arg Gly Gly Leu Ser Asn Val Gly Arg Ala
            365                 370                 375

Ile Ser Phe Val Thr Lys Asn Phe Phe Ser Lys Ala Asn Gly Asn
            380                 385                 390

Arg Ser Gly Ala Pro Asn Val Val Val Met Val Asp Gly Trp
            395                 400                 405

Pro Thr Asp Lys Val Glu Glu Ala Ser Arg Leu Ala Arg Glu Ser
            410                 415                 420
```

54

```
Gly Ile Asn Ile Phe Phe Ile Thr Ile Glu Gly Ala Ala Glu Asn
            425                 430                 435

Glu Lys Gln Tyr Val Val Glu Pro Asn Phe Ala Asn Lys Ala Val
            440                 445                 450

Cys Arg Thr Asn Gly Phe Tyr Ser Leu His Val Gln Ser Trp Phe
            455                 460                 465

Gly Leu His Lys Thr Leu Gln Pro Leu Val Lys Arg Val Cys Asp
            470                 475                 480

Thr Asp Arg Leu Ala Cys Ser Lys Thr Cys Leu Asn Ser Ala Asp
            485                 490                 495

Ile Gly Phe Val Ile Asp Gly Ser Ser Val Gly Thr Gly Asn
            500                 505                 510

Phe Arg Thr Val Leu Gln Phe Val Thr Asn Leu Thr Lys Glu Phe
            515                 520                 525

Glu Ile Ser Asp Thr Asp Thr Arg Ile Gly Ala Val Gln Tyr Thr
            530                 535                 540

Tyr Glu Gln Arg Leu Glu Phe Gly Phe Asp Lys Tyr Ser Ser Lys
            545                 550                 555

Pro Asp Ile Leu Asn Ala Ile Lys Arg Val Gly Tyr Trp Ser Gly
            560                 565                 570

Gly Thr Ser Thr Gly Ala Ala Ile Asn Phe Ala Leu Glu Gln Leu
            575                 580                 585

Phe Lys Lys Ser Lys Pro Asn Lys Arg Lys Leu Met Ile Leu Ile
            590                 595                 600

Thr Asp Gly Arg Ser Tyr Asp Asp Val Arg Ile Pro Ala Met Ala
            605                 610                 615

Ala His Leu Lys Gly Val Ile Thr Tyr Ala Ile Gly Val Ala Trp
            620                 625                 630

Ala Ala Gln Glu Glu Leu Glu Val Ile Ala Thr His Pro Ala Arg
            635                 640                 645

Asp His Ser Phe Phe Val Asp Glu Phe Asp Asn Leu His Gln Tyr
            650                 655                 660

Val Pro Arg Ile Ile Gln Asn Ile Cys Thr Glu Phe Asn Ser Gln
            665                 670                 675

Pro Arg Asn
```

<210> 35
<211> 2095
<212> DNA

<213> Homo Sapien

<400> 35
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ccgagcacag gagattgcct gcgtttagga ggtggctgcg ttgtgggaaa 50

agctatcaag gaagaaattg ccaaaccatg tctttttttc tgttttcaga 100

gtagttcaca acagatctga gtgttttaat taagcatgga atacagaaaa 150

caacaaaaaa cttaagcttt aatttcatct ggaattccac agttttctta 200

gctccctgga cccggttgac ctgttggctc ttcccgctgg ctgctctatc 250

acgtggtgct ctccgactac tcaccccgag tgtaaagaac cttcggctcg 300

cgtgcttctg agctgctgtg gatggcctcg gctctctgga ctgtccttcc 350

gagtaggatg tcactgagat ccctcaaatg gagcctcctg ctgctgtcac 400

tcctgagttt ctttgtgatg tggtacctca gccttcccca ctacaatgtg 450

atagaacgcg tgaactggat gtacttctat gagtatgagc cgatttacag 500

acaagacttt cacttcacac ttcgagagca ttcaaactgc tctcatcaaa 550

atccatttct ggtcattctg gtgacctccc acccttcaga tgtgaaagcc 600

aggcaggcca ttagagttac ttggggtgaa aaaaagtctt ggtggggata 650

tgaggttctt acatttttct tattaggcca agaggctgaa aaggaagaca 700

aaatgttggc attgtcctta gaggatgaac accttcttta tggtgacata 750

atccgacaag attttttaga cacatataat aacctgacct tgaaaaccat 800

tatggcattc aggtgggtaa ctgagttttg ccccaatgcc aagtacgtaa 850

tgaagacaga cactgatgtt ttcatcaata ctggcaattt agtgaagtat 900

cttttaaacc taaaccactc agagaagttt ttcacaggtt atcctctaat 950

tgataattat tcctatagag gattttacca aaaaacccat atttcttacc 1000

aggagtatcc tttcaaggtg ttccctccat actgcagtgg gttgggttat 1050

ataatgtcca gagatttggt gccaaggatc tatgaaatga tgggtcacgt 1100

aaaacccatc aagtttgaag atgtttatgt cgggatctgt ttgaatttat 1150

taaaagtgaa cattcatatt ccagaagaca caaatctttt ctttctatat 1200

agaatccatt tggatgtctg tcaactgaga cgtgtgattg cagcccatgg 1250

cttttcttcc aaggagatca tcactttttg gcaggtcatg ctaaggaaca 1300

ccacatgcca ttattaactt cacattctac aaaaagccta gaaggacagg 1350
```

56

```
ataccttgtg gaaagtgtta aataaagtag gtactgtgga aaattcatgg 1400

ggaggtcagt gtgctggctt acactgaact gaaactcatg aaaaacccag 1450

actggagact ggagggttac acttgtgatt tattagtcag gcccttcaaa 1500

gatgatatgt ggaggaatta aatataaagg aattggaggt ttttgctaaa 1550

gaaattaata ggaccaaaca atttggacat gtcattctgt agactagaat 1600

ttcttaaaag ggtgttactg agttataagc tcactaggct gtaaaaacaa 1650

aacaatgtag agttttattt attgaacaat gtagtcactt gaaggttttg 1700

tgtatatctt atgtggatta ccaatttaaa aatatatgta gttctgtgtc 1750

aaaaaacttc ttcactgaag ttatactgaa caaaatttta cctgtttttg 1800

gtcatttata aagtacttca agatgttgca gtatttcaca gttattatta 1850

tttaaaatta cttcaacttt gtgtttttaa atgttttgac gatttcaata 1900

caagataaaa aggatagtga atcattcttt acatgcaaac attttccagt 1950

tacttaactg atcagtttat tattgataca tcactccatt aatgtaaagt 2000

cataggtcat tattgcatat cagtaatctc ttggactttg ttaaatattt 2050

tactgtggta atatagagaa gaattaaagc aagaaaatct gaaaa 2095
```

<210> 36
<211> 331
<212> PRT
<213> Homo Sapien

<400> 36

```
Met Ala Ser Ala Leu Trp Thr Val Leu Pro Ser Arg Met Ser Leu
 1               5                  10                  15

Arg Ser Leu Lys Trp Ser Leu Leu Leu Ser Leu Leu Ser Phe
                20                  25                  30

Phe Val Met Trp Tyr Leu Ser Leu Pro His Tyr Asn Val Ile Glu
                35                  40                  45

Arg Val Asn Trp Met Tyr Phe Tyr Glu Tyr Glu Pro Ile Tyr Arg
                50                  55                  60

Gln Asp Phe His Phe Thr Leu Arg Glu His Ser Asn Cys Ser His
                65                  70                  75

Gln Asn Pro Phe Leu Val Ile Leu Val Thr Ser His Pro Ser Asp
                80                  85                  90

Val Lys Ala Arg Gln Ala Ile Arg Val Thr Trp Gly Glu Lys Lys
                95                  100                 105
```

57

```
Ser Trp Trp Gly Tyr Glu Val Leu Thr Phe Phe Leu Leu Gly Gln
              110                 115                     120

Glu Ala Glu Lys Glu Asp Lys Met Leu Ala Leu Ser Leu Glu Asp
              125                 130                     135

Glu His Leu Leu Tyr Gly Asp Ile Ile Arg Gln Asp Phe Leu Asp
              140                 145                     150

Thr Tyr Asn Asn Leu Thr Leu Lys Thr Ile Met Ala Phe Arg Trp
              155                 160                     165

Val Thr Glu Phe Cys Pro Asn Ala Lys Tyr Val Met Lys Thr Asp
              170                 175                     180

Thr Asp Val Phe Ile Asn Thr Gly Asn Leu Val Lys Tyr Leu Leu
              185                 190                     195

Asn Leu Asn His Ser Glu Lys Phe Phe Thr Gly Tyr Pro Leu Ile
              200                 205                     210

Asp Asn Tyr Ser Tyr Arg Gly Phe Tyr Gln Lys Thr His Ile Ser
              215                 220                     225

Tyr Gln Glu Tyr Pro Phe Lys Val Phe Pro Pro Tyr Cys Ser Gly
              230                 235                     240

Leu Gly Tyr Ile Met Ser Arg Asp Leu Val Pro Arg Ile Tyr Glu
              245                 250                     255

Met Met Gly His Val Lys Pro Ile Lys Phe Glu Asp Val Tyr Val
              260                 265                     270

Gly Ile Cys Leu Asn Leu Leu Lys Val Asn Ile His Ile Pro Glu
              275                 280                     285

Asp Thr Asn Leu Phe Phe Leu Tyr Arg Ile His Leu Asp Val Cys
              290                 295                     300

Gln Leu Arg Arg Val Ile Ala Ala His Gly Phe Ser Ser Lys Glu
              305                 310                     315

Ile Ile Thr Phe Trp Gln Val Met Leu Arg Asn Thr Thr Cys His
              320                 325                     330

Tyr


<210> 37
<211> 2846
<212> DNA
<213> Homo Sapien

<400> 37
 cgctcgggca ccagccgcgg caaggatgga gctgggttgc tggacgcagt 50

 tggggctcac ttttcttcag ctccttctca tctcgtcctt gccaagagag 100
```

```
tacacagtca ttaatgaagc ctgccctgga gcagagtgga atatcatgtg 150

tcgggagtgc tgtgaatatg atcagattga gtgcgtctgc cccggaaaga 200

gggaagtcgt gggttatacc atcccttgct gcaggaatga ggagaatgag 250

tgtgactcct gcctgatcca cccaggttgt accatctttg aaaactgcaa 300

gagctgccga aatggctcat gggggggtac cttggatgac ttctatgtga 350

aggggttcta ctgtgcagag tgccgagcag gctggtacgg aggagactgc 400

atgcgatgtg gccaggttct gcgagcccca aagggtcaga ttttgttgga 450

aagctatccc ctaaatgctc actgtgaatg gaccattcat gctaaacctg 500

ggtttgtcat ccaactaaga tttgtcatgt tgagtctgga gtttgactac 550

atgtgccagt atgactatgt tgaggttcgt gatggagaca accgcgatgg 600

ccagatcatc aagcgtgtct gtggcaacga gcggccagct cctatccaga 650

gcataggatc ctcactccac gtcctcttcc actccgatgg ctccaagaat 700

tttgacggtt tccatgccat ttatgaggag atcacagcat gctcctcatc 750

cccttgtttc catgacggca cgtgcgtcct tgacaaggct ggatcttaca 800

agtgtgcctg cttggcaggc tatactgggc agcgctgtga aaatctcctt 850

gaagaaagaa actgctcaga ccctgggggc ccagtcaatg ggtaccagaa 900

aataacaggg ggccctgggc ttatcaacgg acgccatgct aaaattggca 950

ccgtggtgtc tttcttttgt aacaactcct atgttcttag tggcaatgag 1000

aaaagaactt gccagcagaa tggagagtgg tcagggaaac agcccatctg 1050

cataaaagcc tgccgagaac caaagatttc agacctggtg agaaggagag 1100

ttcttccgat gcaggttcag tcaagggaga caccattaca ccagctatac 1150

tcagcggcct tcagcaagca gaaactgcag agtgccccta ccaagaagcc 1200

agcccttccc tttggagatc tgcccatggg ataccaacat ctgcataccc 1250

agctccagta tgagtgcatc tcacccttct accgccgcct gggcagcagc 1300

aggaggacat gtctgaggac tgggaagtgg agtgggcggg caccatcctg 1350

catccctatc tgcgggaaaa ttgagaacat cactgctcca aagacccaag 1400

ggttgcgctg ccgtggcag gcagccatct acaggaggac cagcggggtg 1450
catgacggca gcctacacaa gggagcgtgg ttcctagtct gcagcggtgc 1500

cctggtgaat gagcgcactg tggtggtggc tgcccactgt gttactgacc 1550
```

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tggggaaggt caccatgatc aagacagcag acctgaaagt tgttttgggg 1600

aaattctacc gggatgatga ccgggatgag aagaccatcc agagcctaca 1650

gatttctgct atcattctgc atcccaacta tgaccccatc ctgcttgatg 1700

ctgacatcgc catcctgaag ctcctagaca aggcccgtat cagcacccga 1750

gtccagccca tctgcctcgc tgccagtcgg gatctcagca cttccttcca 1800

ggagtcccac atcactgtgg ctggctggaa tgtcctggca gacgtgagga 1850

gccctggctt caagaacgac acactgcgct ctggggtggt cagtgtggtg 1900

gactcgctgc tgtgtgagga gcagcatgag gaccatggca tcccagtgag 1950

tgtcactgat aacatgttct gtgccagctg ggaacccact gccccttctg 2000

atatctgcac tgcagagaca ggaggcatcg cggctgtgtc cttcccggga 2050

cgagcatctc ctgagccacg ctggcatctg atgggactgg tcagctggag 2100

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tgccttttaa agactggatt gaaagaaata tgaaatgaac catgctcatg 2200

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aacctctcca ctccactgac ctggtggtct tccccaactt tcagttatac 2500

gaatgccatc agcttgacca gggaagatct gggcttcatg aggccccttt 2550

tgaggctctc aagttctaga gagctgcctg tgggacagcc cagggcagca 2600

gagctgggat gtggtgcatg cctttgtgta catggccaca gtacagtctg 2650

gtccttttcc ttccccatct cttgtacaca ttttaataaa ataagggttg 2700

gcttctgaac tacaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2750

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2800

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa 2846
```

<210> 38
<211> 720
<212> PRT
<213> Homo Sapien

<400> 38

```
Met Glu Leu Gly Cys Trp Thr Gln Leu Gly Leu Thr Phe Leu Gln
 1               5                  10                  15

Leu Leu Leu Ile Ser Ser Leu Pro Arg Glu Tyr Thr Val Ile Asn
                20                  25                  30

Glu Ala Cys Pro Gly Ala Glu Trp Asn Ile Met Cys Arg Glu Cys
                35                  40                  45

Cys Glu Tyr Asp Gln Ile Glu Cys Val Cys Pro Gly Lys Arg Glu
                50                  55                  60

Val Val Gly Tyr Thr Ile Pro Cys Cys Arg Asn Glu Glu Asn Glu
                65                  70                  75

Cys Asp Ser Cys Leu Ile His Pro Gly Cys Thr Ile Phe Glu Asn
                80                  85                  90

Cys Lys Ser Cys Arg Asn Gly Ser Trp Gly Gly Thr Leu Asp Asp
                95                  100                 105

Phe Tyr Val Lys Gly Phe Tyr Cys Ala Glu Cys Arg Ala Gly Trp
                110                 115                 120

Tyr Gly Gly Asp Cys Met Arg Cys Gly Gln Val Leu Arg Ala Pro
                125                 130                 135

Lys Gly Gln Ile Leu Leu Glu Ser Tyr Pro Leu Asn Ala His Cys
                140                 145                 150

Glu Trp Thr Ile His Ala Lys Pro Gly Phe Val Ile Gln Leu Arg
                155                 160                 165

Phe Val Met Leu Ser Leu Glu Phe Asp Tyr Met Cys Gln Tyr Asp
                170                 175                 180

Tyr Val Glu Val Arg Asp Gly Asp Asn Arg Asp Gly Gln Ile Ile
                185                 190                 195

Lys Arg Val Cys Gly Asn Glu Arg Pro Ala Pro Ile Gln Ser Ile
                200                 205                 210

Gly Ser Ser Leu His Val Leu Phe His Ser Asp Gly Ser Lys Asn
                215                 220                 225

Phe Asp Gly Phe His Ala Ile Tyr Glu Glu Ile Thr Ala Cys Ser
                230                 235                 240

Ser Ser Pro Cys Phe His Asp Gly Thr Cys Val Leu Asp Lys Ala
                245                 250                 255

Gly Ser Tyr Lys Cys Ala Cys Leu Ala Gly Tyr Thr Gly Gln Arg
                260                 265                 270

Cys Glu Asn Leu Leu Glu Glu Arg Asn Cys Ser Asp Pro Gly Gly
                275                 280                 285
```

61

```
Pro Val Asn Gly Tyr Gln Lys Ile Thr Gly Gly Pro Gly Leu Ile
              290                     295                 300
Asn Gly Arg His Ala Lys Ile Gly Thr Val Val Ser Phe Phe Cys
              305                     310                 315
Asn Asn Ser Tyr Val Leu Ser Gly Asn Glu Lys Arg Thr Cys Gln
              320                     325                 330
Gln Asn Gly Glu Trp Ser Gly Lys Gln Pro Ile Cys Ile Lys Ala
              335                     340                 345
Cys Arg Glu Pro Lys Ile Ser Asp Leu Val Arg Arg Arg Val Leu
              350                     355                 360
Pro Met Gln Val Gln Ser Arg Glu Thr Pro Leu His Gln Leu Tyr
              365                     370                 375
Ser Ala Ala Phe Ser Lys Gln Lys Leu Gln Ser Ala Pro Thr Lys
              380                     385                 390
Lys Pro Ala Leu Pro Phe Gly Asp Leu Pro Met Gly Tyr Gln His
              395                     400                 405
Leu His Thr Gln Leu Gln Tyr Glu Cys Ile Ser Pro Phe Tyr Arg
              410                     415                 420
Arg Leu Gly Ser Ser Arg Arg Thr Cys Leu Arg Thr Gly Lys Trp
              425                     430                 435
Ser Gly Arg Ala Pro Ser Cys Ile Pro Ile Cys Gly Lys Ile Glu
              440                     445                 450
Asn Ile Thr Ala Pro Lys Thr Gln Gly Leu Arg Trp Pro Trp Gln
              455                     460                 465
Ala Ala Ile Tyr Arg Arg Thr Ser Gly Val His Asp Gly Ser Leu
              470                     475                 480
His Lys Gly Ala Trp Phe Leu Val Cys Ser Gly Ala Leu Val Asn
              485                     490                 495
Glu Arg Thr Val Val Val Ala Ala His Cys Val Thr Asp Leu Gly
              500                     505                 510
Lys Val Thr Met Ile Lys Thr Ala Asp Leu Lys Val Val Leu Gly
              515                     520                 525
Lys Phe Tyr Arg Asp Asp Asp Arg Asp Glu Lys Thr Ile Gln Ser
              530                     535                 540
Leu Gln Ile Ser Ala Ile Ile Leu His Pro Asn Tyr Asp Pro Ile
              545                     550                 555
Leu Leu Asp Ala Asp Ile Ala Ile Leu Lys Leu Leu Asp Lys Ala
              560                     565                 570
```

62

```
Arg Ile Ser Thr Arg Val Gln Pro Ile Cys Leu Ala Ala Ser Arg
              575                 580                 585

Asp Leu Ser Thr Ser Phe Gln Glu Ser His Ile Thr Val Ala Gly
              590                 595                 600

Trp Asn Val Leu Ala Asp Val Arg Ser Pro Gly Phe Lys Asn Asp
              605      .          610                 615

Thr Leu Arg Ser Gly Val Val Ser Val Val Asp Ser Leu Leu Cys
              620                 625                 630

Glu Glu Gln His Glu Asp His Gly Ile Pro Val Ser Val Thr Asp
              635                 640                 645

Asn Met Phe Cys Ala Ser Trp Glu Pro Thr Ala Pro Ser Asp Ile
              650      .          655                 660

Cys Thr Ala Glu Thr Gly Gly Ile Ala Ala Val Ser Phe Pro Gly
              665                 670                 675

Arg Ala Ser Pro Glu Pro Arg Trp His Leu Met Gly Leu Val Ser
              680                 685                 690

Trp Ser Tyr Asp Lys Thr Cys Ser His Arg Leu Ser Thr Ala Phe
              695                 700          .      705

Thr Lys Val Leu Pro Phe Lys Asp Trp Ile Glu Arg Asn Met Lys
              710                 715                 720

<210> 39
<211> 2571
<212> DNA
<213> Homo Sapien

<400> 39
 ggttcctaca tcctctcatc tgagaatcag agagcataat cttcttacgg 50

 gcccgtgatt tattaacgtg gcttaatctg aaggttctca gtcaaattct 100

 ttgtgatcta ctgattgtgg gggcatggca aggtttgctt aaaggagctt 150

 ggctggtttg ggcccttgta gctgacagaa ggtggccagg gagaatgcag 200

 cacactgctc ggagaatgaa ggcgcttctg ttgctggtct tgccttggct 250

 cagtcctgct aactacattg acaatgtggg caacctgcac ttcctgtatt 300

 cagaactctg taaaggtgcc tcccactacg gcctgaccaa agataggaag 350

 aggcgctcac aagatggctg tccagacggc tgtgcgagcc tcacagccac 400

 ggctccctcc ccagaggttt ctgcagctgc caccatctcc ttaatgacag 450

 acgagcctgg cctagacaac cctgcctacg tgtcctcggc agaggacggg 500

 cagccagcaa tcagcccagt ggactctggc cggagcaacc gaactagggc 550
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63

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acggcccttt gagagatcca ctattagaag cagatcattt aaaaaaataa 600

atcgagcttt gagtgttctt cgaaggacaa agagcgggag tgcagttgcc 650

aaccatgccg accagggcag ggaaaattct gaaaacacca ctgcccctga 700

agtctttcca aggttgtacc acctgattcc agatggtgaa attaccagca 750

tcaagatcaa tcgagtagat cccagtgaaa gcctctctat taggctggtg 800

ggaggtagcg aaaccccact ggtccatatc attatccaac acatttatcg 850

tgatggggtg atcgccagag acggccggct actgccagga gacatcattc 900

taaaggtcaa cgggatggac atcagcaatg tccctcacaa ctacgctgtg 950

cgtctcctgc ggcagccctg ccaggtgctg tggctgactg tgatgcgtga 1000

acagaagttc cgcagcagga acaatggaca ggccccggat gcctacagac 1050

cccgagatga cagctttcat gtgattctca acaaaagtag ccccgaggag 1100

cagcttggaa taaaactggt gcgcaaggtg gatgagcctg gggttttcat 1150

cttcaatgtg ctggatggcg gtgtggcata tcgacatggt cagcttgagg 1200

agaatgaccg tgtgttagcc atcaatggac atgatcttcg atatggcagc 1250

ccagaaagtg cggctcatct gattcaggcc agtgaaagac gtgttcacct 1300

cgtcgtgtcc cgccaggttc ggcagcggag ccctgacatc tttcaggaag 1350

ccggctggaa cagcaatggc agctggtccc cagggccagg ggagaggagc 1400

aacactccca agcccctcca tcctacaatt acttgtcatg agaaggtggt 1450

aaatatccaa aaagaccccg gtgaatctct cggcatgacc gtcgcagggg 1500

gagcatcaca tagagaatgg gatttgccta tctatgtcat cagtgttgag 1550

cccggaggag tcataagcag agatggaaga ataaaaacag gtgacatttt 1600

gttgaatgtg gatggggtcg aactgacaga ggtcagccgg agtgaggcag 1650

tggcattatt gaaaagaaca tcatcctcga tagtactcaa agctttggaa 1700

gtcaaagagt atgagcccca ggaagactgc agcagcccag cagccctgga 1750

ctccaaccac aacatggccc cacccagtga ctggtcccca tcctgggtca 1800

tgtggctgga attaccacgg tgcttgtata actgtaaaga tattgtatta 1850

cgaagaaaca cagctggaag tctgggcttc tgcattgtag gaggttatga 1900

agaatacaat ggaaacaaac ctttttttcat caaatccatt gttgaaggaa 1950
```

64

```
caccagcata caatgatgga agaattagat gtggtgatat tcttcttgct 2000

gtcaatggta gaagtacatc aggaatgata catgcttgct tggcaagact 2050

gctgaaagaa cttaaaggaa gaattactct aactattgtt tcttggcctg 2100

gcactttttt atagaatcaa tgatgggtca gaggaaaaca gaaaaatcac 2150

aaataggcta agaagttgaa acactatatt tatcttgtca gtttttatat 2200

ttaaagaaag aatacattgt aaaaatgtca ggaaagtat gatcatctaa 2250

tgaaagccag ttacacctca gaaaatatga ttccaaaaaa attaaaacta 2300

ctagtttttt ttcagtgtgg aggatttctc attactctac aacattgttt 2350

atattttttc tattcaataa aaagccctaa aacaactaaa atgattgatt 2400

tgtatacccc actgaattca agctgattta aatttaaaat ttggtatatg 2450

ctgaagtctg ccaagggtac attatggcca tttttaattt acagctaaaa 2500

tattttttaa aatgcattgc tgagaaacgt tgctttcatc aaacaagaat 2550

aaatattttt cagaagttaa a 2571
```

<210> 40
<211> 632
<212> PRT
<213> Homo Sapien

<400> 40
```
Met Lys Ala Leu Leu Leu Leu Val Leu Pro Trp Leu Ser Pro Ala
 1               5                  10                  15

Asn Tyr Ile Asp Asn Val Gly Asn Leu His Phe Leu Tyr Ser Glu
                20                  25                  30

Leu Cys Lys Gly Ala Ser His Tyr Gly Leu Thr Lys Asp Arg Lys
                35                  40                  45

Arg Arg Ser Gln Asp Gly Cys Pro Asp Gly Cys Ala Ser Leu Thr
                50                  55                  60

Ala Thr Ala Pro Ser Pro Glu Val Ser Ala Ala Thr Ile Ser
                65                  70                  75

Leu Met Thr Asp Glu Pro Gly Leu Asp Asn Pro Ala Tyr Val Ser
                80                  85                  90

Ser Ala Glu Asp Gly Gln Pro Ala Ile Ser Pro Val Asp Ser Gly
                95                  100                 105

Arg Ser Asn Arg Thr Arg Ala Arg Pro Phe Glu Arg Ser Thr Ile
                110                 115                 120

Arg Ser Arg Ser Phe Lys Lys Ile Asn Arg Ala Leu Ser Val Leu
```

Arg Arg Thr Lys Ser Gly Ser Ala Val Ala Asn His Ala Asp Gln
                140   145   150

Gly Arg Glu Asn Ser Glu Asn Thr Thr Ala Pro Glu Val Phe Pro
                155   160 .   165

Arg Leu Tyr His Leu Ile Pro Asp Gly Glu Ile Thr Ser Ile Lys
                170   175   180

Ile Asn Arg Val Asp Pro Ser Glu Ser Leu Ser Ile Arg Leu Val
                185   190   195

Gly Gly Ser Glu Thr Pro Leu Val His Ile Ile Ile Gln His Ile
                200   205   210

Tyr Arg Asp Gly Val Ile Ala Arg Asp Gly Arg Leu Leu Pro Gly
                215   220   225

Asp Ile Ile Leu Lys Val Asn Gly Met Asp Ile Ser Asn Val Pro
                230   235   240

His Asn Tyr Ala Val Arg Leu Leu Arg Gln Pro Cys Gln Val Leu
                245   250   255

Trp Leu Thr Val Met Arg Glu Gln Lys Phe Arg Ser Arg Asn Asn
                260   265   270

Gly Gln Ala Pro Asp Ala Tyr Arg Pro Arg Asp Asp Ser Phe His
                275   280   285

Val Ile Leu Asn Lys Ser Ser Pro Glu Glu Gln Leu Gly Ile Lys
                290   295   300

Leu Val Arg Lys Val Asp Glu Pro Gly Val Phe Ile Phe Asn Val
                305   310   315

Leu Asp Gly Gly Val Ala Tyr Arg His Gly Gln Leu Glu Glu Asn
                320   325   330

Asp Arg Val Leu Ala Ile Asn Gly His Asp Leu Arg Tyr Gly Ser
                335   340   345

Pro Glu Ser Ala Ala His Leu Ile Gln Ala Ser Glu Arg Arg Val
                350   355   360

His Leu Val Val Ser Arg Gln Val Arg Gln Arg Ser Pro Asp Ile
                365   370   375

Phe Gln Glu Ala Gly Trp Asn Ser Asn Gly Ser Trp Ser Pro Gly
                380   385   390

Pro Gly Glu Arg Ser Asn Thr Pro Lys Pro Leu His Pro Thr Ile
                395   400   405

Thr Cys His Glu Lys Val Val Asn Ile Gln Lys Asp Pro Gly Glu

Ser Leu Gly Met Thr Val Ala Gly Gly Ala Ser His Arg Glu Trp
             425   430   435

Asp Leu Pro Ile Tyr Val Ile Ser Val Glu Pro Gly Gly Val Ile
             440   445   450

Ser Arg Asp Gly Arg Ile Lys Thr Gly Asp Ile Leu Leu Asn Val
             455   460   465

Asp Gly Val Glu Leu Thr Glu Val Ser Arg Ser Glu Ala Val Ala
             470   475   480

Leu Leu Lys Arg Thr Ser Ser Ser Ile Val Leu Lys Ala Leu Glu
             485   490   495

Val Lys Glu Tyr Glu Pro Gln Glu Asp Cys Ser Ser Pro Ala Ala
             500   505   510

Leu Asp Ser Asn His Asn Met Ala Pro Pro Ser Asp Trp Ser Pro
             515   520   525

Ser Trp Val Met Trp Leu Glu Leu Pro Arg Cys Leu Tyr Asn Cys
             530   535   540

Lys Asp Ile Val Leu Arg Arg Asn Thr Ala Gly Ser Leu Gly Phe
             545   550   555

Cys Ile Val Gly Gly Tyr Glu Glu Tyr Asn Gly Asn Lys Pro Phe
             560   565   570

Phe Ile Lys Ser Ile Val Glu Gly Thr Pro Ala Tyr Asn Asp Gly
             575   580   585

Arg Ile Arg Cys Gly Asp Ile Leu Leu Ala Val Asn Gly Arg Ser
             590   595   600

Thr Ser Gly Met Ile His Ala Cys Leu Ala Arg Leu Leu Lys Glu
             605   610   615

Leu Lys Gly Arg Ile Thr Leu Thr Ile Val Ser Trp Pro Gly Thr
             620   625   630

Phe Leu

<210> 41
<211> 1964
<212> DNA
<213> Homo Sapien

<400> 41
 accaggcatt gtatcttcag ttgtcatcaa gttcgcaatc agattggaaa 50

 agctcaactt gaagctttct tgcctgcagt gaagcagaga gatagatatt 100

```
attcacgtaa taaaaaacat gggcttcaac ctgactttcc acctttccta 150

caaattccga ttactgttgc tgttgacttt gtgcctgaca gtggttgggt 200

gggccaccag taactacttc gtgggtgcca ttcaagagat tcctaaagca 250

aaggagttca tggctaattt ccataagacc ctcattttgg ggaagggaaa 300

aactctgact aatgaagcat ccacgaagaa ggtagaactt gacaactgtc 350

cttctgtgtc tccttacctc agaggccaga gcaagctcat tttcaaacca 400

gatctcactt tggaagaggt acaggcagaa aatcccaaag tgtccagagg 450

ccggtatcgc cctcaggaat gtaaagcttt acagagggtc gccatcctcg 500

ttccccaccg aacagagag aaacacctga tgtacctgct ggaacatctg 550

catcccttcc tgcagaggca gcagctggat tatggcatct acgtcatcca 600

ccaggctgaa ggtaaaaagt ttaatcgagc caaactcttg aatgtgggct 650
atctagaagc cctcaaggaa gaaaattggg actgctttat attccacgat 700

gtggacctgg tacccgagaa tgactttaac ctttacaagt gtgaggagca 750

tcccaagcat ctggtggttg gcaggaacag cactgggtac aggttacgtt 800

acagtggata ttttgggggt gttactgccc taagcagaga gcagtttttc 850

aaggtgaatg gattctctaa caactactgg ggatggggag gcgaagacga 900

tgacctcaga ctcagggttg agctccaaag aatgaaaatt tcccggcccc 950

tgcctgaagt gggtaaatat acaatggtct tccacactag agacaaaggc 1000

aatgaggtga acgcagaacg gatgaagctc ttacaccaag tgtcacgagt 1050

ctggagaaca gatgggttga gtagttgttc ttataaatta gtatctgtgg 1100

aacacaatcc tttatatatc aacatcacag tggatttctg gtttggtgca 1150

tgaccctgga tcttttggtg atgtttggaa gaactgattc tttgtttgca 1200

ataattttgg cctagagact tcaaatagta gcacacatta agaacctgtt 1250

acagctcatt gttgagctga atttttcctt tttgtatttt cttagcagag 1300

ctcctggtga tgtagagtat aaaacagttg taacaagaca gctttcttag 1350

tcattttgat catgagggtt aaatattgta atatggatac ttgaaggact 1400

ttatataaaa ggatgactca aaggataaaa tgaacgctat ttgaggactc 1450

tggttgaagg agatttattt aaatttgaag taatatatta tgggataaaa 1500

ggccacagga aataagactg ctgaatgtct gagagaacca gagttgttct 1550
```

```
cgtccaaggt agaaaggtac gaagatacaa tactgttatt catttatcct 1600

gtacaatcat ctgtgaagtg gtggtgtcag gtgagaaggc gtccacaaaa 1650

gaggggagaa aaggcgacga atcaggacac agtgaacttg ggaatgaaga 1700

ggtagcagga gggtggagtg tcggctgcaa aggcagcagt agctgagctg 1750

gttgcaggtg ctgatagcct tcaggggagg acctgcccag gtatgccttc 1800

cagtgatgcc caccagagaa tacattctct attagttttt aaagagtttt 1850

tgtaaaatga ttttgtacaa gtaggatatg aattagcagt ttacaagttt 1900

acatattaac taataataaa tatgtctatc aaatacctct gtagtaaaat 1950

gtgaaaaagc aaaa 1964
```

<210> 42
<211> 344
<212> PRT
<213> Homo Sapien

<400> 42

```
Met Gly Phe Asn Leu Thr Phe His Leu Ser Tyr Lys Phe Arg Leu
 1               5                  10                  15

Leu Leu Leu Leu Thr Leu Cys Leu Thr Val Val Gly Trp Ala Thr
                20                  25                  30

Ser Asn Tyr Phe Val Gly Ala Ile Gln Glu Ile Pro Lys Ala Lys
                35                  40                  45

Glu Phe Met Ala Asn Phe His Lys Thr Leu Ile Leu Gly Lys Gly
                50                  55                  60

Lys Thr Leu Thr Asn Glu Ala Ser Thr Lys Lys Val Glu Leu Asp
                65                  70                  75

Asn Cys Pro Ser Val Ser Pro Tyr Leu Arg Gly Gln Ser Lys Leu
                80                  85                  90

Ile Phe Lys Pro Asp Leu Thr Leu Glu Glu Val Gln Ala Glu Asn
                95                  100                 105

Pro Lys Val Ser Arg Gly Arg Tyr Arg Pro Gln Glu Cys Lys Ala
                110                 115                 120

Leu Gln Arg Val Ala Ile Leu Val Pro His Arg Asn Arg Glu Lys
                125                 130                 135

His Leu Met Tyr Leu Leu Glu His Leu His Pro Phe Leu Gln Arg
                140                 145                 150

Gln Gln Leu Asp Tyr Gly Ile Tyr Val Ile His Gln Ala Glu Gly
                155                 160                 165
```

69

Lys Lys Phe Asn Arg Ala Lys Leu Leu Asn Val Gly Tyr Leu Glu
            170   175   180

Ala Leu Lys Glu Glu Asn Trp Asp Cys Phe Ile Phe His Asp Val
            185   190   195

Asp Leu Val Pro Glu Asn Asp Phe Asn Leu Tyr Lys Cys Glu Glu
            200   205   210

His Pro Lys His Leu Val Val Gly Arg Asn Ser Thr Gly Tyr Arg
            215   220   225

Leu Arg Tyr Ser Gly Tyr Phe Gly Gly Val Thr Ala Leu Ser Arg
            230   235   240

Glu Gln Phe Phe Lys Val Asn Gly Phe Ser Asn Asn Tyr Trp Gly
            245   250   255

Trp Gly Gly Glu Asp Asp Asp Leu Arg Leu Arg Val Glu Leu Gln
            260   265   270

Arg Met Lys Ile Ser Arg Pro Leu Pro Glu Val Gly Lys Tyr Thr
            275   280   285

Met Val Phe His Thr Arg Asp Lys Gly Asn Glu Val Asn Ala Glu
            290   295   300

Arg Met Lys Leu Leu His Gln Val Ser Arg Val Trp Arg Thr Asp
            305   310   315

Gly Leu Ser Ser Cys Ser Tyr Lys Leu Val Ser Val Glu His Asn
            320   325   330

Pro Leu Tyr Ile Asn Ile Thr Val Asp Phe Trp Phe Gly Ala
            335   340

<210> 43
<211> 485
<212> DNA
<213> Homo Sapien

<400> 43
 gctcaagacc cagcagtggg acagccagac agacggcacg atggcactga 50

 gctcccagat ctgggccgct tgcctcctgc tcctcctcct cctcgccagc 100

 ctgaccagtg gctctgtttt cccacaacag acgggacaac ttgcagagct 150

 gcaaccccag acagagctg gagccagggc cagctggatg cccatgttcc 200

 agaggcgaag gaggcgagac acccacttcc ccatctgcat tttctgctgc 250

 ggctgctgtc atcgatcaaa gtgtgggatg tgctgcaaga cgtagaacct 300

 acctgccctg cccccgtccc ctcccttcct tatttattcc tgctgcccca 350

 gaacataggt cttggaataa aatggctggt tcttttgttt tccaaaaaaa 400

```
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 450

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaa 485
```

<210> 44
<211> 84
<212> PRT
<213> Homo Sapien

<400> 44
```
Met Ala Leu Ser Ser Gln Ile Trp Ala Ala Cys Leu Leu Leu Leu
  1               5                  10                  15

Leu Leu Leu Ala Ser Leu Thr Ser Gly Ser Val Phe Pro Gln Gln
               20                  25                  30

Thr Gly Gln Leu Ala Glu Leu Gln Pro Gln Asp Arg Ala Gly Ala
               35                  40                  45

Arg Ala Ser Trp Met Pro Met Phe Gln Arg Arg Arg Arg Arg Asp
               50                  55                  60

Thr His Phe Pro Ile Cys Ile Phe Cys Cys Gly Cys Cys His Arg
               65                  70                  75

Ser Lys Cys Gly Met Cys Cys Lys Thr
               80
```

<210> 45
<211> 1076
<212> DNA
<213> Homo Sapien

<400> 45
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gtggcttcat ttcagtggct gacttccaga gagcaatatg gctggttccc 50

caacatgcct caccctcatc tatatccttt ggcagctcac agggtcagca 100

gcctctggac ccgtgaaaga gctggtcggt tccgttggtg gggccgtgac 150

tttccccctg aagtccaaag taaagcaagt tgactctatt gtctggacct 200

tcaacacaac ccctcttgtc accatacagc cagaaggggg cactatcata 250

gtgacccaaa atcgtaatag ggagagagta gacttcccag atggaggcta 300

ctccctgaag ctcagcaaac tgaagaagaa tgactcaggg atctactatg 350

tggggatata cagctcatca ctccagcagc cctccaccca ggagtacgtg 400

ctgcatgtct acgagcacct gtcaaagcct aaagtcacca tgggtctgca 450

gagcaataag aatggcacct gtgtgaccaa tctgacatgc tgcatggaac 500

atggggaaga ggatgtgatt tatacctgga aggccctggg gcaagcagcc 550
```

71

```
aatgagtccc ataatgggtc catcctcccc atctcctgga gatggggaga 600

aagtgatatg accttcatct gcgttgccag gaaccctgtc agcagaaact 650

tctcaagccc catccttgcc aggaagctct gtgaaggtgc tgctgatgac 700

ccagattcct ccatggtcct cctgtgtctc ctgttggtgc ccctcctgct 750

cagtctcttt gtactggggc tatttctttg gtttctgaag agagagagac 800

aagaagagta cattgaagag aagaagagag tggacatttg tcgggaaact 850

cctaacatat gcccccattc tggagagaac acagagtacg acacaatccc 900

tcacactaat agaacaatcc taaaggaaga tccagcaaat acggtttact 950

ccactgtgga aataccgaaa aagatggaaa atccccactc actgctcacg 1000

atgccagaca caccaaggct atttgcctat gagaatgtta tctagacagc 1050

agtgcactcc cctaagtctc tgctca 1076
```

<210> 46
<211> 335
<212> PRT
<213> Homo Sapien

<400> 46

```
Met Ala Gly Ser Pro Thr Cys Leu Thr Leu Ile Tyr Ile Leu Trp
  1               5                  10                  15

Gln Leu Thr Gly Ser Ala Ala Ser Gly Pro Val Lys Glu Leu Val
                 20                  25                  30
Gly Ser Val Gly Gly Ala Val Thr Phe Pro Leu Lys Ser Lys Val
                 35                  40                  45

Lys Gln Val Asp Ser Ile Val Trp Thr Phe Asn Thr Thr Pro Leu
                 50                  55                  60

Val Thr Ile Gln Pro Glu Gly Gly Thr Ile Ile Val Thr Gln Asn
                 65                  70                  75

Arg Asn Arg Glu Arg Val Asp Phe Pro Asp Gly Gly Tyr Ser Leu
                 80                  85                  90

Lys Leu Ser Lys Leu Lys Lys Asn Asp Ser Gly Ile Tyr Tyr Val
                 95                 100                 105

Gly Ile Tyr Ser Ser Ser Leu Gln Gln Pro Ser Thr Gln Glu Tyr
                110                 115                 120

Val Leu His Val Tyr Glu His Leu Ser Lys Pro Lys Val Thr Met
                125                 130                 135

Gly Leu Gln Ser Asn Lys Asn Gly Thr Cys Val Thr Asn Leu Thr
                140                 145                 150
```

72
```

```
Cys Cys Met Glu His Gly Glu Glu Asp Val Ile Tyr Thr Trp Lys
                155                 160                 165

Ala Leu Gly Gln Ala Ala Asn Glu Ser His Asn Gly Ser Ile Leu
                170                 175                 180

Pro Ile Ser Trp Arg Trp Gly Glu Ser Asp Met Thr Phe Ile Cys
                185                 190                 195

Val Ala Arg Asn Pro Val Ser Arg Asn Phe Ser Ser Pro Ile Leu
                200                 205                 210

Ala Arg Lys Leu Cys Glu Gly Ala Ala Asp Asp Pro Asp Ser Ser
                215                 220                 225

Met Val Leu Leu Cys Leu Leu Leu Val Pro Leu Leu Leu Ser Leu
                230                 235                 240

Phe Val Leu Gly Leu Phe Leu Trp Phe Leu Lys Arg Glu Arg Gln
                245                 250                 255

Glu Glu Tyr Ile Glu Glu Lys Lys Arg Val Asp Ile Cys Arg Glu
                260                 265                 270

Thr Pro Asn Ile Cys Pro His Ser Gly Glu Asn Thr Glu Tyr Asp
                275                 280                 285

Thr Ile Pro His Thr Asn Arg Thr Ile Leu Lys Glu Asp Pro Ala
                290                 295                 300

Asn Thr Val Tyr Ser Thr Val Glu Ile Pro Lys Lys Met Glu Asn
                305                 310                 315

Pro His Ser Leu Leu Thr Met Pro Asp Thr Pro Arg Leu Phe Ala
                320                 325                 330

Tyr Glu Asn Val Ile
                335

<210> 47
<211> 766
<212> DNA
<213> Homo Sapien

<400> 47
 ggctcgagcg tttctgagcc aggggtgacc atgacctgct gcgaaggatg 50

 gacatcctgc aatggattca gcctgctggt tctactgctg ttaggagtag 100

 ttctcaatgc gatacctcta attgtcagct tagttgagga agaccaattt 150

 tctcaaaacc ccatctcttg ctttgagtgg tggttcccag gaattatagg 200

 agcaggtctg atggccattc agcaacaac aatgtccttg acagcaagaa 250

 aaagagcgtg ctgcaacaac agaactggaa tgtttctttc atcattтttc 300
```

```
agtgtgatca cagtcattgg tgctctgtat tgcatgctga tatccatcca 350

ggctctctta aaaggtcctc tcatgtgtaa ttctccaagc aacagtaatg 400

ccaattgtga attttcattg aaaaacatca gtgacattca tccagaatcc 450

ttcaacttgc agtggttttt caatgactct tgtgcacctc ctactggttt 500

caataaaccc accagtaacg acaccatggc gagtggctgg agagcatcta 550

gtttccactt cgattctgaa gaaacaaac ataggcttat ccacttctca 600

gtatttttag gtctattgct tgttggaatt ctggaggtcc tgtttgggct 650

cagtcagata gtcatcggtt tccttggctg tctgtgtgga gtctctaagc 700

gaagaagtca aattgtgtag tttaatggga ataaaatgta agtatcagta 750

gtttgaaaaa aaaaaa 766
```

<210> 48
<211> 229
<212> PRT
<213> Homo Sapien

<400> 48

```
Met Thr Cys Cys Glu Gly Trp Thr Ser Cys Asn Gly Phe Ser Leu
  1               5                  10                  15

Leu Val Leu Leu Leu Leu Gly Val Val Leu Asn Ala Ile Pro Leu
                 20                  25                  30

Ile Val Ser Leu Val Glu Glu Asp Gln Phe Ser Gln Asn Pro Ile
                 35                  40                  45

Ser Cys Phe Glu Trp Trp Phe Pro Gly Ile Ile Gly Ala Gly Leu
                 50                  55                  60

Met Ala Ile Pro Ala Thr Thr Met Ser Leu Thr Ala Arg Lys Arg
                 65                  70                  75

Ala Cys Cys Asn Asn Arg Thr Gly Met Phe Leu Ser Ser Phe Phe
                 80                  85                  90

Ser Val Ile Thr Val Ile Gly Ala Leu Tyr Cys Met Leu Ile Ser
                 95                 100                 105

Ile Gln Ala Leu Leu Lys Gly Pro Leu Met Cys Asn Ser Pro Ser
                110                 115                 120

Asn Ser Asn Ala Asn Cys Glu Phe Ser Leu Lys Asn Ile Ser Asp
                125                 130                 135

Ile His Pro Glu Ser Phe Asn Leu Gln Trp Phe Phe Asn Asp Ser
                140                 145                 150

Cys Ala Pro Pro Thr Gly Phe Asn Lys Pro Thr Ser Asn Asp Thr
```

74

```
                155                    160                    165
Met Ala Ser Gly Trp Arg Ala Ser Ser Phe His Phe Asp Ser Glu
                170                    175                    180

Glu Asn Lys His Arg Leu Ile His Phe Ser Val Phe Leu Gly Leu
                185                    190                    195

Leu Leu Val Gly Ile Leu Glu Val Leu Phe Gly Leu Ser Gln Ile
                200                    205                    210

Val Ile Gly Phe Leu Gly Cys Leu Cys Gly Val Ser Lys Arg Arg
                215                    220                    225

Ser Gln Ile Val
```

<210> 49
<211> 636
<212> DNA
<213> Homo Sapien

<400> 49
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 atccgttctc tgcgctgcca gctcaggtga gccctcgcca aggtgacctc 50

 gcaggacact ggtgaaggag cagtgaggaa cctgcagagt cacacagttg 100

 ctgaccaatt gagctgtgag cctggagcag atccgtgggc tgcagacccc 150

 cgccccagtg cctctccccc tgcagccctg cccctcgaac tgtgacatgg 200

 agagagtgac cctggcccctt ctcctactgg caggcctgac tgccttggaa 250

 gccaatgacc catttgccaa taaagacgat cccttctact atgactggaa 300

 aaacctgcag ctgagcggac tgatctgcgg agggctcctg gccattgctg 350

 ggatcgcggc agttctgagt ggcaaatgca aatacaagag cagccagaag 400

 cagcacagtc ctgtacctga gaaggccatc ccactcatca ctccaggctc 450

 tgccactact tgctgagcac aggactggcc tccagggatg gcctgaagcc 500
 taacactggc ccccagcacc tcctcccctg ggaggcctta tcctcaagga 550

 aggacttctc tccaagggca ggctgttagg cccctttctg atcaggaggc 600

 ttctttatga attaaactcg ccccaccacc ccctca 636
```

<210> 50
<211> 89
<212> PRT
<213> Homo Sapien

<400> 50
```
 Met Glu Arg Val Thr Leu Ala Leu Leu Leu Leu Ala Gly Leu Thr
   1               5                   10                  15
```

```
Ala Leu Glu Ala Asn Asp Pro Phe Ala Asn Lys Asp Asp Pro Phe
                20                      25                      30

Tyr Tyr Asp Trp Lys Asn Leu Gln Leu Ser Gly Leu Ile Cys Gly
                35                      40                      45

Gly Leu Leu Ala Ile Ala Gly Ile Ala Ala Val Leu Ser Gly Lys
                50                      55                      60

Cys Lys Tyr Lys Ser Ser Gln Lys Gln His Ser Pro Val Pro Glu
                65                      70                      75

Lys Ala Ile Pro Leu Ile Thr Pro Gly Ser Ala Thr Thr Cys
                80          ·           85
```

<210> 51
<211> 1734
<212> DNA
<213> Homo Sapien

<400> 51

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 gtggactctg agaagcccag gcagttgagg acaggagaga gaaggctgca 50

 gacccagagg gagggaggac agggagtcgg aaggaggagg acagaggagg 100

 gcacagagac gcagagcaag ggcggcaagg aggagaccct ggtgggagga 150

 agacactctg gagagagagg gggctgggca gagatgaagt tccaggggcc 200

 cctggcctgc ctcctgctgg ccctctgcct gggcagtggg gaggctggcc 250

 ccctgcagag cggagaggaa agcactggga caaatattgg ggaggccctt 300

 ggacatggcc tgggagacgc cctgagcgaa ggggtgggaa aggccattgg 350

 caaagaggcc ggaggggcag ctggctctaa agtcagtgag gcccttggcc 400

 aagggaccag agaagcagtt ggcactggag tcaggcaggt tccaggcttt 450

 ggcgcagcag atgctttggg caacagggtc ggggaagcag cccatgctct 500

 gggaaacact gggcacgaga ttggcagaca ggcagaagat gtcattcgac 550

 acggagcaga tgctgtccgc ggctcctggc aggggtgcc tggccacagt 600

 ggtgcttggg aaacttctgg aggccatggc atctttggct ctcaaggtgg 650

 ccttggaggc cagggccagg gcaatcctgg aggtctgggg actccgtggg 700

 tccacggata ccccggaaac tcagcaggca gctttggaat gaatcctcag 750

 ggagctccct ggggtcaagg aggcaatgga gggccaccaa actttgggac 800

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 gcaaccagaa tgaagggtgc acgaatcccc caccatctgg ctcaggtgga 900
```

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ggctccagca actctggggg aggcagcggc tcacagtcgg gcagcagtgg 950

cagtggcagc aatggtgaca acaacaatgg cagcagcagt ggtggcagca 1000

gcagtggcag cagcagtggc agcagcagtg gcggcagcag tggcggcagc 1050

agtggtggca gcagtggcaa cagtggtggc agcagaggtg acagcggcag 1100

tgagtcctcc tggggatcca gcaccggctc ctcctccggc aaccacggtg 1150

ggagcggcgg aggaaatgga cataaacccg ggtgtgaaaa gccagggaat 1200

gaagcccgcg ggagcgggga tctgggatt cagggcttca gaggacaggg 1250

agtttccagc aacatgaggg aaataagcaa agagggcaat cgcctccttg 1300

gaggctctgg agacaattat cgggggcaag ggtcgagctg gggcagtgga 1350

ggaggtgacg ctgttggtgg agtcaatact gtgaactctg agacgtctcc 1400

tgggatgttt aactttgaca ctttctggaa gaattttaaa tccaagctgg 1450

gtttcatcaa ctgggatgcc ataaacaagg accagagaag ctctcgcatc 1500

ccgtgacctc cagacaagga gccaccagat tggatgggag cccccacact 1550

ccctccttaa aacaccaccc tctcatcact aatctcagcc cttgcccttg 1600

aaataaacct tagctgcccc acaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1650

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1700

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 1734
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<210> 52
<211> 440
<212> PRT
<213> Homo Sapien

<400> 52
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 Met Lys Phe Gln Gly Pro Leu Ala Cys Leu Leu Leu Ala Leu Cys
  1               5                  10                  15

 Leu Gly Ser Gly Glu Ala Gly Pro Leu Gln Ser Gly Glu Glu Ser
                  20                  25                  30

 Thr Gly Thr Asn Ile Gly Glu Ala Leu Gly His Gly Leu Gly Asp
                  35                  40                  45
 Ala Leu Ser Glu Gly Val Gly Lys Ala Ile Gly Lys Glu Ala Gly
                  50                  55                  60

 Gly Ala Ala Gly Ser Lys Val Ser Glu Ala Leu Gly Gln Gly Thr
                  65                  70                  75

 Arg Glu Ala Val Gly Thr Gly Val Arg Gln Val Pro Gly Phe Gly
                  80                  85                  90
```

```
Ala Ala Asp Ala Leu Gly Asn Arg Val Gly Glu Ala Ala His Ala
                95                  100                 105

Leu Gly Asn Thr Gly His Glu Ile Gly Arg Gln Ala Glu Asp Val
                110                 115                 120

Ile Arg His Gly Ala Asp Ala Val Arg Gly Ser Trp Gln Gly Val
                125                 130                 135

Pro Gly His Ser Gly Ala Trp Glu Thr Ser Gly Gly His Gly Ile
                140                 145                 150

Phe Gly Ser Gln Gly Gly Leu Gly Gly Gln Gly Gln Gly Asn Pro
                155                 160                 165

Gly Gly Leu Gly Thr Pro Trp Val His Gly Tyr Pro Gly Asn Ser
                170                 175                 180

Ala Gly Ser Phe Gly Met Asn Pro Gln Gly Ala Pro Trp Gly Gln
                185                 190                 195

Gly Gly Asn Gly Gly Pro Pro Asn Phe Gly Thr Asn Thr Gln Gly
                200                 205                 210

Ala Val Ala Gln Pro Gly Tyr Gly Ser Val Arg Ala Ser Asn Gln
                215                 220                 225

Asn Glu Gly Cys Thr Asn Pro Pro Pro Ser Gly Ser Gly Gly Gly
                230                 235                 240

Ser Ser Asn Ser Gly Gly Gly Ser Gly Ser Gln Ser Gly Ser Ser
                245                 250                 255

Gly Ser Gly Ser Asn Gly Asp Asn Asn Gly Ser Ser Ser Gly
                260                 265                 270

Gly Ser Ser Ser Gly Ser Ser Ser Gly Ser Ser Gly Gly Ser
                275                 280                 285

Ser Gly Gly Ser Ser Gly Gly Ser Ser Gly Asn Ser Gly Gly Ser
                290                 295                 300

Arg Gly Asp Ser Gly Ser Glu Ser Ser Trp Gly Ser Ser Thr Gly
                305                 310                 315

Ser Ser Ser Gly Asn His Gly Gly Ser Gly Gly Gly Asn Gly His
                320                 325                 330

Lys Pro Gly Cys Glu Lys Pro Gly Asn Glu Ala Arg Gly Ser Gly
                335                 340                 345

Glu Ser Gly Ile Gln Gly Phe Arg Gly Gln Gly Val Ser Ser Asn
                350                 355                 360

Met Arg Glu Ile Ser Lys Glu Gly Asn Arg Leu Leu Gly Gly Ser
                365                 370                 375
```

```
Gly Asp Asn Tyr Arg Gly Gln Gly Ser Ser Trp Gly Ser Gly Gly
                380             385             390

Gly Asp Ala Val Gly Gly Val Asn Thr Val Asn Ser Glu Thr Ser
                395             400             405

Pro Gly Met Phe Asn Phe Asp Thr Phe Trp Lys Asn Phe Lys Ser
                410             415             420

Lys Leu Gly Phe Ile Asn Trp Asp Ala Ile Asn Lys Asp Gln Arg
                425             430             435

Ser Ser Arg Ile Pro
                440
```

<210> 53
<211> 1676
<212> DNA
<213> Homo Sapien

<400> 53
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 ggagaagagg ttgtgtggga caagctgctc ccgacagaag gatgtcgctg  50

 ctgagcctgc cctggctggg cctcagaccg gtggcaatgt ccccatggct 100

 actcctgctg ctggttgtgg gctcctggct actcgcccgc atcctggctt 150

 ggacctatgc cttctataac aactgccgcc ggctccagtg tttcccacag 200

 cccccaaaac ggaactggtt ttggggtcac ctgggcctga tcactcctac 250

 agaggagggc ttgaaggact cgacccagat gtcggccacc tattcccagg 300

 gctttacggt atggctgggt cccatcatcc ccttcatcgt tttatgccac 350

 cctgacacca tccggtctat caccaatgcc tcagctgcca ttgcacccaa 400

 ggataatctc ttcatcaggt tcctgaagcc ctggctggga gaagggatac 450

 tgctgagtgg cggtgacaag tggagccgcc accgtcggat gctgacgccc 500

 gccttccatt tcaacatcct gaagtcctat ataacgatct tcaacaagag 550

 tgcaaacatc atgcttgaca agtggcagca cctggcctca gagggcagca 600

 gtcgtctgga catgtttgag cacatcagcc tcatgacctt ggacagtcta 650

 cagaaatgca tcttcagctt tgacagccat tgtcaggaga ggcccagtga 700

 atatattgcc accatcttgg agctcagtgc ccttgtagag aaaagaagcc 750

 agcatatcct ccagcacatg gactttctgt attacctctc ccatgacggg 800

 cggcgcttcc acagggcctg ccgcctggtg catgacttca gagacgctgt 850
 catccgggag cggcgtcgca ccctcccccac tcagggtatt gatgattttt 900

 tcaaagacaa agccaagtcc aagactttgg atttcattga tgtgcttctg 950
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<center>79</center>

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agaggctgac accttcatgt ttggaggcca tgacaccacg gccagtggcc 1050

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tgccgacagg aggtgcaaga gcttctgaag accgcgatc ctaaagagat 1150

tgaatgggac gacctggccc agctgccctt cctgaccatg tgcgtgaagg 1200

agagcctgag gttacatccc ccagctccct tcatctcccg atgctgcacc 1250

caggacattg ttctcccaga tggccgagtc atccccaaag gcattacctg 1300

cctcatcgat attataggg tccatcacaa cccaactgtg tggccggatc 1350

ctgaggtcta cgaccccttc cgctttgacc cagagaacag caaggggagg 1400

tcacctctgg cttttattcc tttctccgca gggcccagga actgcatcgg 1450

gcaggcgttc gccatggcgg agatgaaagt ggtcctggcg ttgatgctgc 1500

tgcacttccg gttcctgcca gaccacactg agccccgcag gaagctggaa 1550

ttgatcatgc gcgccgaggg cgggctttgg ctgcgggtgg agcccctgaa 1600

tgtaggcttg cagtgacttt ctgacccatc cacctgtttt tttgcagatt 1650

gtcatgaata aaacggtgct gtcaaa 1676

<210> 54
<211> 524
<212> PRT
<213> Homo Sapien

<400> 54
Met Ser Leu Leu Ser Leu Pro Trp Leu Gly Leu Arg Pro Val Ala
 1   5   10   15

Met Ser Pro Trp Leu Leu Leu Leu Val Val Gly Ser Trp Leu
                20   25   30

Leu Ala Arg Ile Leu Ala Trp Thr Tyr Ala Phe Tyr Asn Asn Cys
                35   40   45

Arg Arg Leu Gln Cys Phe Pro Gln Pro Lys Arg Asn Trp Phe
                50   55   60

Trp Gly His Leu Gly Leu Ile Thr Pro Thr Glu Glu Gly Leu Lys
                65   70   75

Asp Ser Thr Gln Met Ser Ala Thr Tyr Ser Gln Gly Phe Thr Val
                80   85   90

Trp Leu Gly Pro Ile Ile Pro Phe Ile Val Leu Cys His Pro Asp
                95   100   105

80

```
Thr Ile Arg Ser Ile Thr Asn Ala Ser Ala Ala Ile Ala Pro Lys
              110                 115                 120

Asp Asn Leu Phe Ile Arg Phe Leu Lys Pro Trp Leu Gly Glu Gly
              125                 130                 135

Ile Leu Leu Ser Gly Gly Asp Lys Trp Ser Arg His Arg Arg Met
              140                 145                 150

Leu Thr Pro Ala Phe His Phe Asn Ile Leu Lys Ser Tyr Ile Thr
              155                 160                 165

Ile Phe Asn Lys Ser Ala Asn Ile Met Leu Asp Lys Trp Gln His
              170                 175                 180

Leu Ala Ser Glu Gly Ser Ser Arg Leu Asp Met Phe Glu His Ile
              185                 190                 195

Ser Leu Met Thr Leu Asp Ser Leu Gln Lys Cys Ile Phe Ser Phe
              200                 205                 210

Asp Ser His Cys Gln Glu Arg Pro Ser Glu Tyr Ile Ala Thr Ile
              215                 220                 225

Leu Glu Leu Ser Ala Leu Val Glu Lys Arg Ser Gln His Ile Leu
              230                 235                 240

Gln His Met Asp Phe Leu Tyr Tyr Leu Ser His Asp Gly Arg Arg
              245                 250                 255

Phe His Arg Ala Cys Arg Leu Val His Asp Phe Thr Asp Ala Val
              260                 265                 270

Ile Arg Glu Arg Arg Arg Thr Leu Pro Thr Gln Gly Ile Asp Asp
              275                 280                 285

Phe Phe Lys Asp Lys Ala Lys Ser Lys Thr Leu Asp Phe Ile Asp
              290                 295                 300

Val Leu Leu Leu Ser Lys Asp Glu Asp Gly Lys Ala Leu Ser Asp
              305                 310                 315

Glu Asp Ile Arg Ala Glu Ala Asp Thr Phe Met Phe Gly Gly His
              320                 325                 330

Asp Thr Thr Ala Ser Gly Leu Ser Trp Val Leu Tyr Asn Leu Ala
              335                 340                 345

Arg His Pro Glu Tyr Gln Glu Arg Cys Arg Gln Glu Val Gln Glu
              350                 355                 360

Leu Leu Lys Asp Arg Asp Pro Lys Glu Ile Glu Trp Asp Asp Leu
              365                 370                 375

Ala Gln Leu Pro Phe Leu Thr Met Cys Val Lys Glu Ser Leu Arg
              380                 385                 390
```

```
Leu His Pro Pro Ala Pro Phe Ile Ser Arg Cys Cys Thr Gln Asp
                395             400             405

Ile Val Leu Pro Asp Gly Arg Val Ile Pro Lys Gly Ile Thr Cys
                410             415             420

Leu Ile Asp Ile Ile Gly Val His His Asn Pro Thr Val Trp Pro
                425             430             435

Asp Pro Glu Val Tyr Asp Pro Phe Arg Phe Asp Pro Glu Asn Ser
                440             445             450

Lys Gly Arg Ser Pro Leu Ala Phe Ile Pro Phe Ser Ala Gly Pro
                455             460             465

Arg Asn Cys Ile Gly Gln Ala Phe Ala Met Ala Glu Met Lys Val
                470             475             480

Val Leu Ala Leu Met Leu Leu His Phe Arg Phe Leu Pro Asp His
                485             490             495

Thr Glu Pro Arg Arg Lys Leu Glu Leu Ile Met Arg Ala Glu Gly
                500             505             510

Gly Leu Trp Leu Arg Val Glu Pro Leu Asn Val Gly Leu Gln
                515             520
```

<210> 55
<211> 644
<212> DNA
<213> Homo Sapien

<400> 55
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 atcgcatcaa ttgggagtac catcttcctc atgggaccag tgaaacagct  50

 gaagcgaatg tttgagccta ctcgtttgat tgcaactatc atggtgctgt  100

 tgtgttttgc acttaccctg tgttctgcct tttggtggca taacaaggga  150

 cttgcactta tcttctgcat tttgcagtct ttggcattga cgtggtacag  200

 cctttccttc ataccatttg caagggatgc tgtgaagaag tgttttgccg  250

 tgtgtcttgc ataattcatg gccagtttta tgaagctttg gaaggcacta  300

 tggacagaag ctggtggaca gttttgtaac tatcttcgaa acctctgtct  350

 tacagacatg tgccttttat cttgcagcaa tgtgttgctt gtgattcgaa  400

 catttgaggg ttacttttgg aagcaacaat acattctcga acctgaatgt  450

 cagtagcaca ggatgagaag tgggttctgt atcttgtgga gtggaatctt  500

 cctcatgtac ctgtttcctc tctggatgtt gtcccactga attcccatga  550

 atacaaacct attcagcaac agcaaaaaaa aaaaaaaaaa aaaaaaaaaa  600
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                                    82

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 644

<210> 56
<211> 77
<212> PRT
<213> Homo Sapien
<400> 56
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Met Gly Pro Val Lys Gln Leu Lys Arg Met Phe Glu Pro Thr Arg
 1               5                  10                      15

Leu Ile Ala Thr Ile Met Val Leu Leu Cys Phe Ala Leu Thr Leu
                20                  25                      30

Cys Ser Ala Phe Trp Trp His Asn Lys Gly Leu Ala Leu Ile Phe
                35                  40                      45

Cys Ile Leu Gln Ser Leu Ala Leu Thr Trp Tyr Ser Leu Ser Phe
                50                  55                      60

Ile Pro Phe Ala Arg Asp Ala Val Lys Lys Cys Phe Ala Val Cys
                65                  70                      75

Leu Ala
```

<210> 57
<211> 3334
<212> DNA
<213> Homo Sapien

<400> 57
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cggctcgagc tcgagccgaa tcggctcgag gggcagtgga gcacccagca 50

ggccgccaac atgctctgtc tgtgcctgta cgtgccggtc atcggggaag 100

cccagaccga gttccagtac tttgagtcga aggggctccc tgccgagctg 150

aagtccattt tcaagctcag tgtcttcatc ccctcccagg aattctccac 200

ctaccgccag tggaagcaga aaattgtaca agctggagat aaggaccttg 250

atgggcagct agactttgaa gaatttgtcc attatctcca agatcatgag 300

aagaagctga ggctggtgtt taagattttg gacaaaaaga atgatggacg 350

cattgacgcg caggagatca tgcagtccct gcgggacttg ggagtcaaga 400

tatctgaaca gcaggcagaa aaaattctca gagcatgga taaaaacggc 450

acgatgacca tcgactggaa cgagtggaga gactaccacc tcctccaccc 500

cgtggaaaac atccccgaga tcatcctcta ctggaagcat tccacgatct 550

ttgatgtggg tgagaatcta acggtcccgg atgagttcac agtggaggag 600

aggcagacgg ggatgtggtg gagacacctg gtggcaggag gtggggcagg 650
```

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ggccgtatcc agaacctgca cggcccccct ggacaggctc aaggtgctca 700

tgcaggtcca tgcctcccgc agcaacaaca tgggcatcgt tggtggcttc 750

actcagatga ttcgagaagg aggggccagg tcactctggc ggggcaatgg 800

catcaacgtc ctcaaaattg cccccgaatc agccatcaaa ttcatggcct 850

atgagcagat caagcgcctt gttggtagtg accaggagac tctgaggatt 900
cacgagaggc ttgtggcagg gtccttggca ggggccatcg cccagagcag 950

catctaccca atggaggtcc tgaagacccg gatggcgctg cggaagacag 1000

gccagtactc aggaatgctg gactgcgcca ggaggatcct ggccagagag 1050

ggggtggccg ccttctacaa aggctatgtc cccaacatgc tgggcatcat 1100

cccctatgcc ggcatcgacc ttgcagtcta cgagacgctc aagaatgcct 1150

ggctgcagca ctatgcagtg aacagcgcgg accccggcgt gtttgtgctc 1200

ctggcctgtg gcaccatgtc cagtacctgt ggccagctgg ccagctaccc 1250

cctggcccta gtcaggaccc ggatgcaggc gcaagcctct attgagggcg 1300

ctccggaggt gaccatgagc agcctcttca aacatatcct gcggaccgag 1350

ggggccttcg ggctgtacag ggggctggcc cccaacttca tgaaggtcat 1400

cccagctgtg agcatcagct acgtggtcta cgagaacctg aagatcaccc 1450

tgggcgtgca gtcgcggtga cggggggagg gccgcccggc agtggactcg 1500

ctgatcctgg gccgcagcct ggggtgtgca gccatctcat tctgtgaatg 1550

tgccaacact aagctgtctc gagccaagct gtgaaaaccc tagacgcacc 1600

cgcagggagg gtggggagag ctggcaggcc cagggcttgt cctgctgacc 1650

ccagcagacc ctcctgttgg ttccagcgaa gaccacaggc attccttagg 1700

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ttccatttca cccttgcagc cagctgttgg ccacggcccc tgccctctgg 1850

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ataatccatg atgaaaggtg aggtcacgtg gcctcccagg cctgacttcc 2000

caacctacag cattgacgcc aacttggctg tgaaggaaga ggaaaggatc 2050

tggccttgtg gtcactggca tctgagccct gctgatggct ggggctctcg 2100
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84

ggcatgcttg ggagtgcagg gggctcgggc tgcctggcct ggctgcacag 2150

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gcccttgctt aacaatgccg gccaactggc gacctcacgg ttgcacttcc 3100

attccaccag aatgacctga tgaggaaatc ttcaatagga tgcaaagatc 3150

aatgcaaaaa ttgttatata tgaacatata actggagtcg tcaaaaagca 3200

aattaagaaa gaattggacg ttagaagttg tcatttaaag cagccttcta 3250

ataaagttgt ttcaaagctg aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 3300

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 3334

<210> 58
<211> 469
<212> PRT
<213> Homo Sapien

<400> 58
 Met Leu Cys Leu Cys Leu Tyr Val Pro Val Ile Gly Glu Ala Gln

```
        1                      5                       10                      15

      Thr Glu Phe Gln Tyr Phe Glu Ser Lys Gly Leu Pro Ala Glu Leu
                      20                      25                      30

      Lys Ser Ile Phe Lys Leu Ser Val Phe Ile Pro Ser Gln Glu Phe
                      35                      40                      45

      Ser Thr Tyr Arg Gln Trp Lys Gln Lys Ile Val Gln Ala Gly Asp
                      50                      55                      60

      Lys Asp Leu Asp Gly Gln Leu Asp Phe Glu Glu Phe Val His Tyr
                      65                      70                      75

      Leu Gln Asp His Glu Lys Lys Leu Arg Leu Val Phe Lys Ile Leu
                      80                      85                      90

      Asp Lys Lys Asn Asp Gly Arg Ile Asp Ala Gln Glu Ile Met Gln
                      95                      100                     105

      Ser Leu Arg Asp Leu Gly Val Lys Ile Ser Glu Gln Gln Ala Glu
                      110                     115                     120

      Lys Ile Leu Lys Ser Met Asp Lys Asn Gly Thr Met Thr Ile Asp
                      125                     130                     135

      Trp Asn Glu Trp Arg Asp Tyr His Leu Leu His Pro Val Glu Asn
                      140                     145                     150

      Ile Pro Glu Ile Ile Leu Tyr Trp Lys His Ser Thr Ile Phe Asp
                      155                     160                     165

      Val Gly Glu Asn Leu Thr Val Pro Asp Glu Phe Thr Val Glu Glu
                      170                     175                     180

      Arg Gln Thr Gly Met Trp Trp Arg His Leu Val Ala Gly Gly Gly
                      185                     190                     195

      Ala Gly Ala Val Ser Arg Thr Cys Thr Ala Pro Leu Asp Arg Leu
                      200                     205                     210

      Lys Val Leu Met Gln Val His Ala Ser Arg Ser Asn Asn Met Gly
                      215                     220                     225

      Ile Val Gly Gly Phe Thr Gln Met Ile Arg Glu Gly Gly Ala Arg
                      230                     235                     240

      Ser Leu Trp Arg Gly Asn Gly Ile Asn Val Leu Lys Ile Ala Pro
                      245                     250                     255

      Glu Ser Ala Ile Lys Phe Met Ala Tyr Glu Gln Ile Lys Arg Leu
                      260                     265                     270

      Val Gly Ser Asp Gln Glu Thr Leu Arg Ile His Glu Arg Leu Val
                      275                     280                     285

      Ala Gly Ser Leu Ala Gly Ala Ile Ala Gln Ser Ser Ile Tyr Pro
```

```
                  290                      295                      300

Met Glu Val Leu Lys Thr Arg Met Ala Leu Arg Lys Thr Gly Gln
                305                      310                      315

Tyr Ser Gly Met Leu Asp Cys Ala Arg Arg Ile Leu Ala Arg Glu
                320                      325                      330

Gly Val Ala Ala Phe Tyr Lys Gly Tyr Val Pro Asn Met Leu Gly
                335                      340                      345

Ile Ile Pro Tyr Ala Gly Ile Asp Leu Ala Val Tyr Glu Thr Leu
                350                      355                      360

Lys Asn Ala Trp Leu Gln His Tyr Ala Val Asn Ser Ala Asp Pro
                365                      370                      375

Gly Val Phe Val Leu Leu Ala Cys Gly Thr Met Ser Ser Thr Cys
                380                      385                      390

Gly Gln Leu Ala Ser Tyr Pro Leu Ala Leu Val Arg Thr Arg Met
                395                      400                      405

Gln Ala Gln Ala Ser Ile Glu Gly Ala Pro Glu Val Thr Met Ser
                410                      415                      420

Ser Leu Phe Lys His Ile Leu Arg Thr Glu Gly Ala Phe Gly Leu
                425                      430                      435

Tyr Arg Gly Leu Ala Pro Asn Phe Met Lys Val Ile Pro Ala Val
                440                      445                      450

Ser Ile Ser Tyr Val Val Tyr Glu Asn Leu Lys Ile Thr Leu Gly
                455                      460                      465

Val Gln Ser Arg


<210> 59
<211> 1658
<212> DNA
<213> Homo Sapien

<400> 59
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 ttccccagcc atggcttccc tggggcagat cctcttctgg agcataatta 100

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 atttcaggga gacactccat cacagtcact actgtcgcct cagctgggaa 200

 cattggggag gatggaatcc tgagctgcac ttttgaacct gacatcaaac 250

 tttctgatat cgtgatacaa tggctgaagg aaggtgtttt aggcttggtc 300

 catgagttca agaaggcaa agatgagctg tcggagcagg atgaaatgtt 350
```

87

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cagaggccgg acagcagtgt ttgctgatca agtgatagtt ggcaatgcct 400

ctttgcggct gaaaaacgtg caactcacag atgctggcac ctacaaatgt 450

tatatcatca cttctaaagg caaggggaat gctaaccttg agtataaaac 500

tggagccttc agcatgccgg aagtgaatgt ggactataat gccagctcag 550

agaccttgcg gtgtgaggct ccccgatggt tcccccagcc cacagtggtc 600

tgggcatccc aagttgacca gggagccaac ttctcggaag tctccaatac 650

cagctttgag ctgaactctg agaatgtgac catgaaggtt gtgtctgtgc 700

tctacaatgt tacgatcaac aacacatact cctgtatgat tgaaaatgac 750

attgccaaag caacagggga tatcaaagtg acagaatcgg agatcaaaag 800

gcggagtcac ctacagctgc taaactcaaa ggcttctctg tgtgtctctt 850

ctttctttgc catcagctgg gcacttctgc ctctcagccc ttacctgatg 900

ctaaaataat gtgccttggc cacaaaaaag catgcaaagt cattgttaca 950

acagggatct acagaactat ttcaccacca gatatgacct agttttatat 1000

ttctgggagg aaatgaattc atatctagaa gtctggagtg agcaaacaag 1050

agcaagaaac aaaaagaagc caaaagcaga aggctccaat atgaacaaga 1100

taaatctatc ttcaaagaca tattagaagt tgggaaaata attcatgtga 1150

actagacaag tgtgttaaga gtgataagta aaatgcacgt ggagacaagt 1200

gcatccccag atctcaggga cctccccctg cctgtcacct ggggagtgag 1250

aggacaggat agtgcatgtt ctttgtctct gaatttttag ttatatgtgc 1300

tgtaatgttg ctctgaggaa gcccctggaa agtctatccc aacatatcca 1350

catcttatat tccacaaatt aagctgtagt atgtaccta agacgctgct 1400

aattgactgc cacttcgcaa ctcaggggcg gctgcatttt agtaatgggt 1450

caaatgattc acttttttatg atgcttccaa aggtgccttg gcttctcttc 1500

ccaactgaca aatgccaaag ttgagaaaaa tgatcataat tttagcataa 1550

acagagcagt cggggacacc gattttataa ataaactgag caccttctttt 1600

ttaaacaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1650

aaaaaaaa 1658

<210> 60
<211> 282
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88

<212> PRT
<213> Homo Sapien

<400> 60
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Met Ala Ser Leu Gly Gln Ile Leu Phe Trp Ser Ile Ile Ser Ile
 1               5                  10                  15

Ile Ile Ile Leu Ala Gly Ala Ile Ala Leu Ile Ile Gly Phe Gly
                20                  25                  30

Ile Ser Gly Arg His Ser Ile Thr Val Thr Thr Val Ala Ser Ala
                35                  40                  45

Gly Asn Ile Gly Glu Asp Gly Ile Leu Ser Cys Thr Phe Glu Pro
                50                  55                  60

Asp Ile Lys Leu Ser Asp Ile Val Ile Gln Trp Leu Lys Glu Gly
                65                  70                  75

Val Leu Gly Leu Val His Glu Phe Lys Glu Gly Lys Asp Glu Leu
                80                  85                  90

Ser Glu Gln Asp Glu Met Phe Arg Gly Arg Thr Ala Val Phe Ala
                95                  100                 105
Asp Gln Val Ile Val Gly Asn Ala Ser Leu Arg Leu Lys Asn Val
                110                 115                 120

Gln Leu Thr Asp Ala Gly Thr Tyr Lys Cys Tyr Ile Ile Thr Ser
                125                 130                 135

Lys Gly Lys Gly Asn Ala Asn Leu Glu Tyr Lys Thr Gly Ala Phe
                140                 145                 150

Ser Met Pro Glu Val Asn Val Asp Tyr Asn Ala Ser Ser Glu Thr
                155                 160                 165

Leu Arg Cys Glu Ala Pro Arg Trp Phe Pro Gln Pro Thr Val Val
                170                 175                 180

Trp Ala Ser Gln Val Asp Gln Gly Ala Asn Phe Ser Glu Val Ser
                185                 190                 195

Asn Thr Ser Phe Glu Leu Asn Ser Glu Asn Val Thr Met Lys Val
                200                 205                 210

Val Ser Val Leu Tyr Asn Val Thr Ile Asn Asn Thr Tyr Ser Cys
                215                 220                 225

Met Ile Glu Asn Asp Ile Ala Lys Ala Thr Gly Asp Ile Lys Val
                230                 235                 240

Thr Glu Ser Glu Ile Lys Arg Arg Ser His Leu Gln Leu Leu Asn
                245                 250                 255

Ser Lys Ala Ser Leu Cys Val Ser Ser Phe Phe Ala Ile Ser Trp
                260                 265                 270
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Ala Leu Leu Pro Leu Ser Pro Tyr Leu Met Leu Lys
                275   280

<210> 61
<211> 1617
<212> DNA
<213> Homo Sapien

<400> 61
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 cccccaata gtggagggca gtatggtagt gggctacccc ctggtggtgg 150

 ttatgggggt cctgcccctg gagggcctta tggaccacca gctggtggag 200

 ggccctatgg acaccccaat cctgggatgt tcccctctgg aactccagga 250

 ggaccatatg gcggtgcagc tcccgggggc ccctatggtc agccacctcc 300

 aagttcctac ggtgcccagc agcctgggct ttatggacag ggtggcgccc 350

 ctcccaatgt ggatcctgag gcctactcct ggttccagtc ggtggactca 400

 gatcacagtg gctatatctc catgaaggag ctaaagcagg ccctggtcaa 450

 ctgcaattgg tcttcattca atgatgagac ctgcctcatg atgataaaca 500

 tgtttgacaa gaccaagtca ggccgcatcg atgtctacgg cttctcagcc 550

 ctgtggaaat tcatccagca gtggaagaac ctcttccagc agtatgaccg 600

 ggaccgctcg ggctccatta gctacacaga gctgcagcaa gctctgtccc 650

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 tactgcccac gctctgccaa tcctgccatg cagcttgacc gcttcatcca 750

 ggtgtgcacc cagctgcagg tgctgacaga ggccttccgg gagaaggaca 800

 cagctgtaca aggcaacatc cggctcagct tcgaggactt cgtcaccatg 850

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 tcttttcctg tccctctaga agaacattct cccttgcttg atgcaacact 1000

 gttccaaaag agggtggaga gtcctgcatc atagccacca aatagtgagg 1050

 accggggctg aggccacaca gatagggggcc tgatggagga gaggatagaa 1100

 gttgaatgtc ctgatggcca tgagcagttg agtggcacag cctggcacca 1150

 ggagcaggtc cttgtaatgg agttagtgtc cagtcagctg agctccaccc 1200

```
tgatgccagt ggtgagtgtt catcggcctg ttaccgttag tacctgtgtt 1250

ccctcaccag gccatcctgt caaacgagcc cattttctcc aaagtggaat 1300

ctgaccaagc atgagagaga tctgtctatg ggaccagtgg cttggattct 1350

gccacaccca taaatccttg tgtgttaact tctagctgcc tggggctggc 1400

cctgctcaga caaatctgct ccctgggcat ctttggccag gcttctgccc 1450

cctgcagctg ggacccctca cttgcctgcc atgctctgct cggcttcagt 1500

ctccaggaga cagtggtcac ctctccctgc caatactttt tttaatttgc 1550

atttttttc atttggggcc aaaagtccag tgaaattgta agcttcaata 1600

aaaggatgaa actctga 1617
```

<210> 62
<211> 284
<212> PRT
<213> Homo Sapien

<400> 62
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Met Ala Ser Tyr Pro Tyr Arg Gln Gly Cys Pro Gly Ala Ala Gly
 1               5                  10                  15

Gln Ala Pro Gly Ala Pro Pro Gly Ser Tyr Tyr Pro Gly Pro Pro
                20                  25                  30

Asn Ser Gly Gly Gln Tyr Gly Ser Gly Leu Pro Pro Gly Gly Gly
                35                  40                  45

Tyr Gly Gly Pro Ala Pro Gly Gly Pro Tyr Gly Pro Pro Ala Gly
                50                  55                  60

Gly Gly Pro Tyr Gly His Pro Asn Pro Gly Met Phe Pro Ser Gly
                65                  70                  75

Thr Pro Gly Gly Pro Tyr Gly Gly Ala Ala Pro Gly Gly Pro Tyr
                80                  85                  90

Gly Gln Pro Pro Pro Ser Ser Tyr Gly Ala Gln Gln Pro Gly Leu
                95                  100                 105

Tyr Gly Gln Gly Gly Ala Pro Pro Asn Val Asp Pro Glu Ala Tyr
                110                 115                 120

Ser Trp Phe Gln Ser Val Asp Ser Asp His Ser Gly Tyr Ile Ser
                125                 130                 135

Met Lys Glu Leu Lys Gln Ala Leu Val Asn Cys Asn Trp Ser Ser
                140                 145                 150

Phe Asn Asp Glu Thr Cys Leu Met Met Ile Asn Met Phe Asp Lys
                155                 160                 165
```

```
Thr Lys Ser Gly Arg Ile Asp Val Tyr Gly Phe Ser Ala Leu Trp
            170               175           180

Lys Phe Ile Gln Gln Trp Lys Asn Leu Phe Gln Gln Tyr Asp Arg
            185               190           195

Asp Arg Ser Gly Ser Ile Ser Tyr Thr Glu Leu Gln Gln Ala Leu
            200               205           210

Ser Gln Met Gly Tyr Asn Leu Ser Pro Gln Phe Thr Gln Leu Leu
            215               220           225

Val Ser Arg Tyr Cys Pro Arg Ser Ala Asn Pro Ala Met Gln Leu
            230               235           240

Asp Arg Phe Ile Gln Val Cys Thr Gln Leu Gln Val Leu Thr Glu
            245               250           255

Ala Phe Arg Glu Lys Asp Thr Ala Val Gln Gly Asn Ile Arg Leu
            260               265           270

Ser Phe Glu Asp Phe Val Thr Met Thr Ala Ser Arg Met Leu
            275               280
```

<210> 63
<211> 1234
<212> DNA
<213> Homo Sapien

<400> 63
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caggatgcag ggccgcgtgg cagggagctg cgctcctctg ggcctgctcc 50

tggtctgtct tcatctccca ggcctctttg cccggagcat cggtgttgtg 100
gaggagaaag tttcccaaaa cttcgggacc aacttgcctc agctcggaca 150

accttcctcc actggcccct ctaactctga acatccgcag cccgctctgg 200

accctaggtc taatgacttg gcaagggttc ctctgaagct cagcgtgcct 250

ccatcagatg gcttcccacc tgcaggaggt tctgcagtgc agaggtggcc 300

tccatcgtgg gggctgcctg ccatggattc ctggcccct gaggatcctt 350

ggcagatgat ggctgctgcg gctgaggacc gcctggggga agcgctgcct 400

gaagaactct cttacctctc cagtgctgcg gccctcgctc cgggcagtgg 450

ccctttgcct ggggagtctt ctcccgatgc cacaggcctc tcacctgagg 500

cttcactcct ccaccaggac tcggagtcca gacgactgcc ccgttctaat 550

tcactgggag ccggggggaaa aatcctttcc caacgccctc cctggtctct 600

catccacagg gttctgcctg atcacccctg gggtaccctg aatcccagtg 650

tgtcctgggg aggtggaggc cctgggactg gttggggaac gaggcccatg 700
```

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ccacaccctg agggaatctg gggtatcaat aatcaacccc caggtaccag 750

ctggggaaat attaatcggt atccaggagg cagctgggga aatattaatc 800

ggtatccagg aggcagctgg gggaatatta atcggtatcc aggaggcagc 850

tgggggaata ttcatctata cccaggtatc aataacccat tcctcctgg 900

agttctccgc cctcctggct cttcttggaa catcccagct ggcttcccta 950

atcctccaag ccctaggttg cagtggggct agagcacgat agagggaaac 1000

ccaacattgg gagttagagt cctgctcccg ccccttgctg tgtgggctca 1050

atccaggccc tgttaacatg tttccagcac tatccccact tttcagtgcc 1100

tcccctgctc atctccaata aaataaaagc acttatgaaa aaaaaaaaa 1150

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1200

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 1234
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<210> 64
<211> 325
<212> PRT
<213> Homo Sapien

<400> 64

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 Met Gln Gly Arg Val Ala Gly Ser Cys Ala Pro Leu Gly Leu Leu
  1               5                  10                  15

 Leu Val Cys Leu His Leu Pro Gly Leu Phe Ala Arg Ser Ile Gly
                  20                  25                  30

 Val Val Glu Glu Lys Val Ser Gln Asn Phe Gly Thr Asn Leu Pro
                  35                  40                  45
 Gln Leu Gly Gln Pro Ser Ser Thr Gly Pro Ser Asn Ser Glu His
                  50                  55                  60

 Pro Gln Pro Ala Leu Asp Pro Arg Ser Asn Asp Leu Ala Arg Val
                  65                  70                  75

 Pro Leu Lys Leu Ser Val Pro Pro Ser Asp Gly Phe Pro Pro Ala
                  80                  85                  90

 Gly Gly Ser Ala Val Gln Arg Trp Pro Pro Ser Trp Gly Leu Pro
                  95                  100                 105

 Ala Met Asp Ser Trp Pro Pro Glu Asp Pro Trp Gln Met Met Ala
                  110                 115                 120

 Ala Ala Ala Glu Asp Arg Leu Gly Glu Ala Leu Pro Glu Glu Leu
                  125                 130                 135

 Ser Tyr Leu Ser Ser Ala Ala Ala Leu Ala Pro Gly Ser Gly Pro
                  140                 145                 150
```

```
Leu Pro Gly Glu Ser Ser Pro Asp Ala Thr Gly Leu Ser Pro Glu
                155                 160             165

Ala Ser Leu Leu His Gln Asp Ser Glu Ser Arg Arg Leu Pro Arg
                170                 175             180

Ser Asn Ser Leu Gly Ala Gly Gly Lys Ile Leu Ser Gln Arg Pro
                185                 190             195

Pro Trp Ser Leu Ile His Arg Val Leu Pro Asp His Pro Trp Gly
                200                 205             210

Thr Leu Asn Pro Ser Val Ser Trp Gly Gly Gly Pro Gly Thr
                215                 220             225

Gly Trp Gly Thr Arg Pro Met Pro His Pro Glu Gly Ile Trp Gly
                230                 235             240

Ile Asn Asn Gln Pro Pro Gly Thr Ser Trp Gly Asn Ile Asn Arg
                245                 250             255

Tyr Pro Gly Gly Ser Trp Gly Asn Ile Asn Arg Tyr Pro Gly Gly
                260                 265             270

Ser Trp Gly Asn Ile Asn Arg Tyr Pro Gly Gly Ser Trp Gly Asn
                275                 280             285

Ile His Leu Tyr Pro Gly Ile Asn Asn Pro Phe Pro Pro Gly Val
                290                 295             300

Leu Arg Pro Pro Gly Ser Ser Trp Asn Ile Pro Ala Gly Phe Pro
                305                 310             315

Asn Pro Pro Ser Pro Arg Leu Gln Trp Gly
                320                 325

<210> 65
<211> 422
<212> DNA
<213> Homo Sapien

<400> 65
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 ggccactatg gggtctgggc tgccccttgt cctcctcttg accctccttg 100

 gcagctcaca tggaacaggg ccgggtatga ctttgcaact gaagctgaag 150

 gagtctttc tgacaaattc ctcctatgag tccagcttcc tggaattgct 200

 tgaaaagctc tgcctcctcc tccatctccc ttcagggacc agcgtcaccc 250

 tccaccatgc aagatctcaa caccatgttg tctgcaacac atgacagcca 300

 ttgaagcctg tgtccttctt ggcccgggct tttgggccgg ggatgcagga 350

 ggcaggcccc gaccctgtct ttcagcaggc ccccaccctc ctgagtggca 400
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94

```
ataaataaaa ttcggtatgc tg 422
```

<210> 66
<211> 78
<212> PRT
<213> Homo Sapien

<400> 66

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 Met Gly Ser Gly Leu Pro Leu Val Leu Leu Leu Thr Leu Leu Gly
  1               5                  10                  15

 Ser Ser His Gly Thr Gly Pro Gly Met Thr Leu Gln Leu Lys Leu
                  20                  25                  30

 Lys Glu Ser Phe Leu Thr Asn Ser Ser Tyr Glu Ser Ser Phe Leu
                  35                  40                  45

 Glu Leu Leu Glu Lys Leu Cys Leu Leu Leu His Leu Pro Ser Gly
                  50                  55                  60

 Thr Ser Val Thr Leu His His Ala Arg Ser Gln His His Val Val
                  65                  70                  75

 Cys Asn Thr
```

<210> 67
<211> 744
<212> DNA
<213> Homo Sapien

<400> 67

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 acggaccgag ggttcgaggg agggacacgg accaggaacc tgagctaggt 50

 caaagacgcc cgggccaggt gccccgtcgc aggtgcccct ggccggagat 100

 gcggtaggag gggcgagcgc gagaagcccc ttcctcggcg ctgccaaccc 150

 gccacccagc ccatggcgaa ccccgggctg gggctgcttc tggcgctggg 200

 cctgccgttc ctgctggccc gctggggccg agcctggggg caaatacaga 250
 ccacttctgc aaatgagaat agcactgttt tgccttcatc caccagctcc 300

 agctccgatg gcaacctgcg tccggaagcc atcactgcta tcatcgtggt 350

 cttctccctc ttggctgcct tgctcctggc tgtggggctg gcactgttgg 400

 tgcggaagct tcgggagaag cggcagacgg agggcaccta ccggcccagt 450

 agcgaggagc agttctccca tgcagccgag gcccgggccc ctcaggactc 500

 caaggagacg gtgcagggct gcctgcccat ctaggtcccc tctcctgcat 550

 ctgtctccct tcattgctgt gtgaccttgg ggaaaggcag tgccctctct 600

 gggcagtcag atccacccag tgcttaatag cagggaagaa ggtacttcaa 650
```

agactctgcc cctgaggtca agagaggatg gggctattca ctttatata 700

tttatataaa attagtagtg agatgtaaaa aaaaaaaaaa aaaa 744

<210> 68
<211> 123
<212> PRT
<213> Homo Sapien

<400> 68
 Met Ala Asn Pro Gly Leu Gly Leu Leu Leu Ala Leu Gly Leu Pro
  1   5   10   15

 Phe Leu Leu Ala Arg Trp Gly Arg Ala Trp Gly Gln Ile Gln Thr
                 20   25   30

 Thr Ser Ala Asn Glu Asn Ser Thr Val Leu Pro Ser Ser Thr Ser
                 35   40   45

 Ser Ser Ser Asp Gly Asn Leu Arg Pro Glu Ala Ile Thr Ala Ile
                 50   55   60

 Ile Val Val Phe Ser Leu Leu Ala Ala Leu Leu Leu Ala Val Gly
                 65   70   75

 Leu Ala Leu Leu Val Arg Lys Leu Arg Glu Lys Arg Gln Thr Glu
                 80   85   90

 Gly Thr Tyr Arg Pro Ser Ser Glu Glu Gln Phe Ser His Ala Ala
                 95   100   105

 Glu Ala Arg Ala Pro Gln Asp Ser Lys Glu Thr Val Gln Gly Cys
                 110   115   120

 Leu Pro Ile

<210> 69
<211> 3265
<212> DNA
<213> Homo Sapien

<400> 69
 gccaggaata actagagagg aacaatgggg ttattcagag gttttgtttt 50
 cctcttagtt ctgtgcctgc tgcaccagtc aaatacttcc ttcattaagc 100

 tgaataataa tggctttgaa gatattgtca ttgttataga tcctagtgtg 150

 ccagaagatg aaaaaataat tgaacaaata gaggatatgg tgactacagc 200

 ttctacgtac ctgtttgaag ccacagaaaa aagatttttt ttcaaaaatg 250

 tatctatatt aattcctgag aattggaagg aaaatcctca gtacaaaagg 300

 ccaaaacatg aaaaccataa acatgctgat gttatagttg caccacctac 350

96

```
actcccaggt agagatgaac catacaccaa gcagttcaca gaatgtggag 400

agaaaggcga atacattcac ttcacccctg accttctact tggaaaaaaa 450

caaaatgaat atggaccacc aggcaaactg tttgtccatg agtgggctca 500

cctccggtgg ggagtgtttg atgagtacaa tgaagatcag cctttctacc 550

gtgctaagtc aaaaaaaatc gaagcaacaa ggtgttccgc aggtatctct 600

ggtagaaata gagtttataa gtgtcaagga ggcagctgtc ttagtagagc 650

atgcagaatt gattctacaa caaaactgta tggaaaagat tgtcaattct 700

ttcctgataa agtacaaaca gaaaaagcat ccataatgtt tatgcaaagt 750

attgattctg ttgttgaatt ttgtaacgaa aaaacccata atcaagaagc 800

tccaagccta caaaacataa agtgcaattt tagaagtaca tgggaggtga 850

ttagcaattc tgaggatttt aaaaacacca tacccatggt gacaccacct 900

cctccacctg tcttctcatt gctgaagatc agtcaaagaa ttgtgtgctt 950

agttcttgat aagtctggaa gcatggggggg taaggaccgc ctaaatcgaa 1000

tgaatcaagc agcaaaacat ttcctgctgc agactgttga aaatggatcc 1050

tgggtggggga tggttcactt tgatagtact gccactattg taaataagct 1100

aatccaaata aaaagcagtg atgaaagaaa cacactcatg gcaggattac 1150

ctacatatcc tctgggagga acttccatct gctctggaat taaatatgca 1200

tttcaggtga ttggagagct acattcccaa ctcgatggat ccgaagtact 1250

gctgctgact gatggggagg ataacactgc aagttcttgt attgatgaag 1300

tgaaacaaag tggggccatt gttcatttta ttgctttggg aagagctgct 1350

gatgaagcag taatagagat gagcaagata acaggaggaa gtcatttta 1400

tgtttcagat gaagctcaga acaatggcct cattgatgct tttggggctc 1450

ttacatcagg aaatactgat ctctcccaga agtcccttca gctcgaaagt 1500

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tgatagtaca gtgggaaagg acacgttctt tctcatcaca tggaacagtc 1600

tgcctcccag tatttctctc tgggatccca gtggaacaat aatggaaaat 1650

ttcacagtgg atgcaacttc caaaatggcc tatctcagta ttccaggaac 1700

tgcaaaggtg ggcacttggg catacaatct tcaagccaaa gcgaacccag 1750

aaacattaac tattacagta acttctcgag cagcaaattc ttctgtgcct 1800
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97

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ccaatcacag tgaatgctaa aatgaataag gacgtaaaca gtttccccag 1850

cccaatgatt gtttacgcag aaattctaca aggatatgta cctgttcttg 1900

gagccaatgt gactgctttc attgaatcac agaatggaca tacagaagtt 1950

ttggaacttt tggataatgg tgcaggcgct gattctttca agaatgatgg 2000

agtctactcc aggtatttta cagcatatac agaaaatggc agatatagct 2050

taaaagttcg ggctcatgga ggagcaaaca ctgccaggct aaaattacgg 2100

cctccactga atagagccgc gtacatacca ggctgggtag tgaacgggga 2150

aattgaagca aacccgccaa gacctgaaat tgatgaggat actcagacca 2200

ccttggagga tttcagccga acagcatccg gaggtgcatt tgtggtatca 2250

caagtcccaa gccttccctt gcctgaccaa tacccaccaa gtcaaatcac 2300

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ataagtgcaa gtattcttga tctaagagac agttttgatg atgctcttca 2450

agtaaatact actgatctgt caccaaagga ggccaactcc aaggaaagct 2500

ttgcatttaa accagaaaat atctcagaag aaaatgcaac ccacatattt 2550

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cattgcacaa gtaactttgt ttatccctca agcaaatcct gatgacattg 2650

atcctacacc tactcctact cctactccta ctcctgataa aagtcataat 2700

tctggagtta atatttctac gctggtattg tctgtgattg ggtctgttgt 2750

aattgttaac tttatttttaa gtaccaccat ttgaacctta acgaagaaaa 2800

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gtaaaggata tttctgaatc ttaaaattca tcccatgtgt gatcataaac 2900

tcataaaaat aattttaaga tgtcggaaaa ggatactttg attaaataaa 2950

aacactcatg gatatgtaaa aactgtcaag attaaaattt aatagtttca 3000

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tcatactgat acctggttgt atattatttg atgcaacagt tttctgaaat 3100

gatatttcaa attgcatcaa gaaattaaaa tcatctatct gagtagtcaa 3150

aatacaagta aaggagagca aataaacaac atttggaaaa aaaaaaaaa 3200
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aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 3250

aaaaaaaaaa aaaaa 3265

<210> 70
<211> 919
<212> PRT
<213> Homo Sapien

<400> 70

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Met Gly Leu Phe Arg Gly Phe Val Phe Leu Leu Val Leu Cys Leu
 1               5                  10                  15

Leu His Gln Ser Asn Thr Ser Phe Ile Lys Leu Asn Asn Asn Gly
                20                  25                  30

Phe Glu Asp Ile Val Ile Val Ile Asp Pro Ser Val Pro Glu Asp
                35                  40                  45

Glu Lys Ile Ile Glu Gln Ile Glu Asp Met Val Thr Thr Ala Ser
                50                  55                  60

Thr Tyr Leu Phe Glu Ala Thr Glu Lys Arg Phe Phe Phe Lys Asn
                65                  70                  75

Val Ser Ile Leu Ile Pro Glu Asn Trp Lys Glu Asn Pro Gln Tyr
                80                  85                  90

Lys Arg Pro Lys His Glu Asn His Lys His Ala Asp Val Ile Val
                95                  100                 105

Ala Pro Pro Thr Leu Pro Gly Arg Asp Glu Pro Tyr Thr Lys Gln
                110                 115                 120

Phe Thr Glu Cys Gly Glu Lys Gly Glu Tyr Ile His Phe Thr Pro
                125                 130                 135

Asp Leu Leu Leu Gly Lys Lys Gln Asn Glu Tyr Gly Pro Pro Gly
                140                 145                 150

Lys Leu Phe Val His Glu Trp Ala His Leu Arg Trp Gly Val Phe
                155                 160                 165

Asp Glu Tyr Asn Glu Asp Gln Pro Phe Tyr Arg Ala Lys Ser Lys
                170                 175                 180

Lys Ile Glu Ala Thr Arg Cys Ser Ala Gly Ile Ser Gly Arg Asn
                185                 190                 195

Arg Val Tyr Lys Cys Gln Gly Gly Ser Cys Leu Ser Arg Ala Cys
                200                 205                 210

Arg Ile Asp Ser Thr Thr Lys Leu Tyr Gly Lys Asp Cys Gln Phe
                215                 220                 225
Phe Pro Asp Lys Val Gln Thr Glu Lys Ala Ser Ile Met Phe Met
                230                 235                 240
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99

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Gln Ser Ile Asp Ser Val Val Glu Phe Cys Asn Glu Lys Thr His
            245             250             255

Asn Gln Glu Ala Pro Ser Leu Gln Asn Ile Lys Cys Asn Phe Arg
            260             265             270

Ser Thr Trp Glu Val Ile Ser Asn Ser Glu Asp Phe Lys Asn Thr
            275             280             285

Ile Pro Met Val Thr Pro Pro Pro Pro Val Phe Ser Leu Leu
            290             295             300

Lys Ile Ser Gln Arg Ile Val Cys Leu Val Leu Asp Lys Ser Gly
            305             310             315

Ser Met Gly Gly Lys Asp Arg Leu Asn Arg Met Asn Gln Ala Ala
            320             325             330

Lys His Phe Leu Leu Gln Thr Val Glu Asn Gly Ser Trp Val Gly
            335             340             345

Met Val His Phe Asp Ser Thr Ala Thr Ile Val Asn Lys Leu Ile
            350             355             360

Gln Ile Lys Ser Ser Asp Glu Arg Asn Thr Leu Met Ala Gly Leu
            365             370             375

Pro Thr Tyr Pro Leu Gly Gly Thr Ser Ile Cys Ser Gly Ile Lys
            380             385             390

Tyr Ala Phe Gln Val Ile Gly Glu Leu His Ser Gln Leu Asp Gly
            395             400             405

Ser Glu Val Leu Leu Leu Thr Asp Gly Glu Asp Asn Thr Ala Ser
            410             415             420

Ser Cys Ile Asp Glu Val Lys Gln Ser Gly Ala Ile Val His Phe
            425             430             435

Ile Ala Leu Gly Arg Ala Ala Asp Glu Ala Val Ile Glu Met Ser
            440             445             450

Lys Ile Thr Gly Gly Ser His Phe Tyr Val Ser Asp Glu Ala Gln
            455             460             465

Asn Asn Gly Leu Ile Asp Ala Phe Gly Ala Leu Thr Ser Gly Asn
            470             475             480

Thr Asp Leu Ser Gln Lys Ser Leu Gln Leu Glu Ser Lys Gly Leu
            485             490             495

Thr Leu Asn Ser Asn Ala Trp Met Asn Asp Thr Val Ile Ile Asp
            500             505             510

Ser Thr Val Gly Lys Asp Thr Phe Phe Leu Ile Thr Trp Asn Ser
            515             520             525
```

100

Leu Pro Pro Ser Ile Ser Leu Trp Asp Pro Ser Gly Thr Ile Met
              530   535   540

Glu Asn Phe Thr Val Asp Ala Thr Ser Lys Met Ala Tyr Leu Ser
              545   550   555

Ile Pro Gly Thr Ala Lys Val Gly Thr Trp Ala Tyr Asn Leu Gln
              560   565   570

Ala Lys Ala Asn Pro Glu Thr Leu Thr Ile Thr Val Thr Ser Arg
              575   580   585

Ala Ala Asn Ser Ser Val Pro Pro Ile Thr Val Asn Ala Lys Met
              590   595   600

Asn Lys Asp Val Asn Ser Phe Pro Ser Pro Met Ile Val Tyr Ala
              605   610   615

Glu Ile Leu Gln Gly Tyr Val Pro Val Leu Gly Ala Asn Val Thr
              620   625   630

Ala Phe Ile Glu Ser Gln Asn Gly His Thr Glu Val Leu Glu Leu
              635   640   645

Leu Asp Asn Gly Ala Gly Ala Asp Ser Phe Lys Asn Asp Gly Val
              650   655   660

Tyr Ser Arg Tyr Phe Thr Ala Tyr Thr Glu Asn Gly Arg Tyr Ser
              665   670   675

Leu Lys Val Arg Ala His Gly Gly Ala Asn Thr Ala Arg Leu Lys
              680   685   690

Leu Arg Pro Pro Leu Asn Arg Ala Ala Tyr Ile Pro Gly Trp Val
              695   700   705

Val Asn Gly Glu Ile Glu Ala Asn Pro Pro Arg Pro Glu Ile Asp
              710   715   720

Glu Asp Thr Gln Thr Thr Leu Glu Asp Phe Ser Arg Thr Ala Ser
              725   730   735

Gly Gly Ala Phe Val Val Ser Gln Val Pro Ser Leu Pro Leu Pro
              740   745   750

Asp Gln Tyr Pro Pro Ser Gln Ile Thr Asp Leu Asp Ala Thr Val
              755   760   765

His Glu Asp Lys Ile Ile Leu Thr Trp Thr Ala Pro Gly Asp Asn
              770   775   780

Phe Asp Val Gly Lys Val Gln Arg Tyr Ile Ile Arg Ile Ser Ala
              785   790   795

Ser Ile Leu Asp Leu Arg Asp Ser Phe Asp Asp Ala Leu Gln Val
              800   805   810

101

Asn Thr Thr Asp Leu Ser Pro Lys Glu Ala Asn Ser Lys Glu Ser
                815   820   825

Phe Ala Phe Lys Pro Glu Asn Ile Ser Glu Glu Asn Ala Thr His
                830   835   840

Ile Phe Ile Ala Ile Lys Ser Ile Asp Lys Ser Asn Leu Thr Ser
                845   850   855

Lys Val Ser Asn Ile Ala Gln Val Thr Leu Phe Ile Pro Gln Ala
                860   865   870

Asn Pro Asp Asp Ile Asp Pro Thr Pro Thr Pro Thr Pro Thr Pro
                875   880   885

Thr Pro Asp Lys Ser His Asn Ser Gly Val Asn Ile Ser Thr Leu
                890   895   900

Val Leu Ser Val Ile Gly Ser Val Val Ile Val Asn Phe Ile Leu
                905   910   915

Ser Thr Thr Ile

<210> 71
<211> 3877
<212> DNA
<213> Homo Sapien

<400> 71
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aagaccatac gtccccgggc aggggtgaca acaggtgtca tcttttttgat 100

ctcgtgtgtg gctgccttcc tatttcaagg aaagacgcca aggtaatttt 150

gacccagagg agcaatgatg tagccacctc ctaaccttcc cttcttgaac 200

ccccagttat gccaggattt actagagagt gtcaactcaa ccagcaagcg 250

gctccttcgg cttaacttgt ggttggagga gagaaccttt gtggggctgc 300

gttctcttag cagtgctcag aagtgacttg cctgagggtg gaccagaaga 350

aaggaaaggt cccctcttgc tgttggctgc acatcaggaa ggctgtgatg 400

ggaatgaagg tgaaaacttg gagatttcac ttcagtcatt gcttctgcct 450

gcaagatcat cctttaaaag tagagaagct gctctgtgtg gtggttaact 500

ccaagaggca gaactcgttc tagaaggaaa tggatgcaag cagctccggg 550

ggccccaaac gcatgcttcc tgtggtctag cccagggaag cccttccgtg 600

ggggcccggg ctttgaggga tgccaccggt tctggacgca tggctgattc 650

ctgaatgatg atggttcgcc gggggctgct tgcgtggatt tcccgggtgg 700

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tggttttgct ggtgctcctc tgctgtgcta tctctgtcct gtacatgttg 750

gcctgcaccc caaaaggtga cgaggagcag ctggcactgc ccagggccaa 800

cagccccacg gggaaggagg ggtaccaggc cgtccttcag gagtgggagg 850
agcagcaccg caactacgtg agcagcctga agcggcagat cgcacagctc 900

aaggaggagc tgcaggagag gagtgagcag ctcaggaatg ggcagtacca 950

agccagcgat gctgctggcc tgggtctgga caggagcccc ccagagaaaa 1000

cccaggccga cctcctggcc ttcctgcact cgcaggtgga caaggcagag 1050

gtgaatgctg gcgtcaagct ggccacagag tatgcagcag tgcctttcga 1100

tagctttact ctacagaagg tgtaccagct ggagactggc cttacccgcc 1150

accccgagga gaagcctgtg aggaaggaca agcgggatga gttggtggaa 1200

gccattgaat cagccttgga gaccctgaac aatcctgcag agaacagccc 1250

caatcaccgt ccttacacgg cctctgattt catagaaggg atctaccgaa 1300

cagaaaggga caaagggaca ttgtatgagc tcaccttcaa aggggaccac 1350

aaacacgaat tcaaacggct catcttattt cgaccattca gccccatcat 1400

gaaagtgaaa aatgaaaagc tcaacatggc caacacgctt atcaatgtta 1450

tcgtgcctct agcaaaaagg gtggacaagt tccggcagtt catgcagaat 1500

ttcagggaga tgtgcattga gcaggatggg agagtccatc tcactgttgt 1550

ttactttggg aaagaagaaa taaatgaagt caaaggaata cttgaaaaca 1600

cttccaaagc tgccaacttc aggaacttta ccttcatcca gctgaatgga 1650

gaattttctc ggggaaaggg acttgatgtt ggagcccgct tctggaaggg 1700

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tatccagttc ttttcagtca gtacaatcct ggcataatat acggccacca 1850

tgatgcagtc cctcccttgg aacagcagct ggtcataaag aaggaaactg 1900

gattttggag agactttgga tttgggatga cgtgtcagta tcggtcagac 1950

ttcatcaata taggtgggtt tgatctggac atcaaaggct ggggcggaga 2000

ggatgtgcac ctttatcgca agtatctcca cagcaacctc atagtggtac 2050

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gacgagctga cccccgagca gtacaagatg tgcatgcagt ccaaggccat 2150
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103

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gaacgaggca tcccacggcc agctgggcat gctggtgttc aggcacgaga 2200

tagaggctca ccttcgcaaa cagaaacaga agacaagtag caaaaaaaca 2250

tgaactccca gagaaggatt gtgggagaca ctttttcttt ccttttgcaa 2300

ttactgaaag tggctgcaac agagaaaaga cttccataaa ggacgacaaa 2350

agaattggac tgatgggtca gagatgagaa agcctccgat ttctctctgt 2400

tgggcttttt acaacagaaa tcaaaatctc cgctttgcct gcaaaagtaa 2450

cccagttgca ccctgtgaag tgtctgacaa aggcagaatg cttgtgagat 2500

tataagccta atggtgtgga ggttttgatg gtgtttacaa tacactgaga 2550

cctgttgttt tgtgtgctca ttgaaatatt catgatttaa gagcagtttt 2600

gtaaaaaatt cattagcatg aaaggcaagc atatttctcc tcatatgaat 2650

gagcctatca gcagggctct agtttctagg aatgctaaaa tatcagaagg 2700

caggagagga gataggctta ttatgatact agtgagtaca ttaagtaaaa 2750

taaaatggac cagaaaagaa aagaaaccat aaatatcgtg tcatattttc 2800

cccaagatta accaaaaata atctgcttat cttttggtt gtccttttaa 2850

ctgtctccgt ttttttcttt tatttaaaaa tgcacttttt ttcccttgtg 2900

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acaagttggc ctacattttt atattttta agaagatact ttgagatgca 3000

ttatgagaac tttcagttca aagcatcaaa ttgatgccat atccaaggac 3050

atgccaaatg ctgattctgt caggcactga atgtcaggca ttgagacata 3100

gggaaggaat ggtttgtact aatacagacg tacagatact ttctctgaag 3150

agtattttcg aagaggagca actgaacact ggaggaaaag aaaatgacac 3200

tttctgcttt acagaaaagg aaactcattc agactggtga tatcgtgatg 3250

tacctaaaag tcagaaacca cattttctcc tcagaagtag ggaccgcttt 3300

cttacctgtt taaataaacc aaagtatacc gtgtgaacca aacaatctct 3350

tttcaaaaca gggtgctcct cctggcttct ggcttccata agaagaaatg 3400

gagaaaaata tatatatata tatatatatt gtgaaagatc aatccatctg 3450

ccagaatcta gtgggatgga agtttttgct acatgttatc caccccaggc 3500

caggtggaag taactgaatt atttttaaa ttaagcagtt ctactcaatc 3550
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accaagatgc ttctgaaaat tgcattttat taccatttca aactattttt 3600

taaaaataaa tacagttaac atagagtggt ttcttcattc atgtgaaaat 3650

tattagccag caccagatgc atgagctaat tatctctttg agtccttgct 3700

tctgtttgct cacagtaaac tcattgttta aaagcttcaa gaacattcaa 3750

gctgttggtg tgttaaaaaa tgcattgtat tgatttgtac tggtagttta 3800

tgaaatttaa ttaaaacaca ggccatgaat ggaaggtggt attgcacagc 3850

taataaaata tgatttgtgg atatgaa 3877
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<210> 72
<211> 532
<212> PRT
<213> Homo Sapien

<400> 72
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Met Met Met Val Arg Arg Gly Leu Leu Ala Trp Ile Ser Arg Val
 1               5                  10                  15

Val Val Leu Leu Val Leu Leu Cys Cys Ala Ile Ser Val Leu Tyr
                20                  25                  30

Met Leu Ala Cys Thr Pro Lys Gly Asp Glu Glu Gln Leu Ala Leu
                35                  40                  45

Pro Arg Ala Asn Ser Pro Thr Gly Lys Glu Gly Tyr Gln Ala Val
                50                  55                  60

Leu Gln Glu Trp Glu Glu Gln His Arg Asn Tyr Val Ser Ser Leu
                65                  70                  75

Lys Arg Gln Ile Ala Gln Leu Lys Glu Glu Leu Gln Glu Arg Ser
                80                  85                  90

Glu Gln Leu Arg Asn Gly Gln Tyr Gln Ala Ser Asp Ala Ala Gly
                95                  100                 105

Leu Gly Leu Asp Arg Ser Pro Pro Glu Lys Thr Gln Ala Asp Leu
                110                 115                 120

Leu Ala Phe Leu His Ser Gln Val Asp Lys Ala Glu Val Asn Ala
                125                 130                 135

Gly Val Lys Leu Ala Thr Glu Tyr Ala Ala Val Pro Phe Asp Ser
                140                 145                 150

Phe Thr Leu Gln Lys Val Tyr Gln Leu Glu Thr Gly Leu Thr Arg
                155                 160                 165

His Pro Glu Glu Lys Pro Val Arg Lys Asp Lys Arg Asp Glu Leu
                170                 175                 180

Val Glu Ala Ile Glu Ser Ala Leu Glu Thr Leu Asn Asn Pro Ala
```

Glu Asn Ser Pro Asn His Arg Pro Tyr Thr Ala Ser Asp Phe Ile
            200   205   210

Glu Gly Ile Tyr Arg Thr Glu Arg Asp Lys Gly Thr Leu Tyr Glu
            215   220   225

Leu Thr Phe Lys Gly Asp His Lys His Glu Phe Lys Arg Leu Ile
            230   235   240

Leu Phe Arg Pro Phe Ser Pro Ile Met Lys Val Lys Asn Glu Lys
            245   250   255

Leu Asn Met Ala Asn Thr Leu Ile Asn Val Ile Val Pro Leu Ala
            260   265   270

Lys Arg Val Asp Lys Phe Arg Gln Phe Met Gln Asn Phe Arg Glu
            275   280   285

Met Cys Ile Glu Gln Asp Gly Arg Val His Leu Thr Val Val Tyr
            290   295   300

Phe Gly Lys Glu Glu Ile Asn Glu Val Lys Gly Ile Leu Glu Asn
            305   310   315

Thr Ser Lys Ala Ala Asn Phe Arg Asn Phe Thr Phe Ile Gln Leu
            320   325   330

Asn Gly Glu Phe Ser Arg Gly Lys Gly Leu Asp Val Gly Ala Arg
            335   340   345

Phe Trp Lys Gly Ser Asn Val Leu Leu Phe Phe Cys Asp Val Asp
            350   355   360

Ile Tyr Phe Thr Ser Glu Phe Leu Asn Thr Cys Arg Leu Asn Thr
            365   370   375

Gln Pro Gly Lys Lys Val Phe Tyr Pro Val Leu Phe Ser Gln Tyr
            380   385   390

Asn Pro Gly Ile Ile Tyr Gly His His Asp Ala Val Pro Pro Leu
            395   400   405

Glu Gln Gln Leu Val Ile Lys Lys Glu Thr Gly Phe Trp Arg Asp
            410   415   420

Phe Gly Phe Gly Met Thr Cys Gln Tyr Arg Ser Asp Phe Ile Asn
            425   430   435

Ile Gly Gly Phe Asp Leu Asp Ile Lys Gly Trp Gly Gly Glu Asp
            440   445   450

Val His Leu Tyr Arg Lys Tyr Leu His Ser Asn Leu Ile Val Val
            455   460   465

Arg Thr Pro Val Arg Gly Leu Phe His Leu Trp His Glu Lys Arg

```
                  470                   475                   480

Cys Met Asp Glu Leu Thr Pro Glu Gln Tyr Lys Met Cys Met Gln
                  485                   490                   495

Ser Lys Ala Met Asn Glu Ala Ser His Gly Gln Leu Gly Met Leu
                  500                   505                   510

Val Phe Arg His Glu Ile Glu Ala His Leu Arg Lys Gln Lys Gln
                  515                   520                   525

Lys Thr Ser Ser Lys Lys Thr
                  530
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<210> 73
<211> 1701
<212> DNA
<213> Homo Sapien
<220>
<221> unsure
<222> 1528
<223> unknown base

<400> 73
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gagactgcag agggagataa agagagaggg caaagaggca gcaagagatt 50

tgtcctgggg atccagaaac ccatgatacc ctactgaaca ccgaatcccc 100

tggaagccca cagagacaga gacagcaaga gaagcagaga taaatacact 150

cacgccagga gctcgctcgc tctctctctc tctctctcac tcctccctcc 200

ctctctctct gcctgtccta gtcctctagt cctcaaattc ccagtcccct 250

gcaccccttc ctgggacact atgttgttct ccgccctcct gctggaggtg 300

atttggatcc tggctgcaga tgggggtcaa cactggacgt atgagggccc 350

acatggtcag gaccattggc cagcctctta ccctgagtgt ggaaacaatg 400

cccagtcgcc catcgatatt cagacagaca gtgtgacatt tgaccctgat 450

ttgcctgctc tgcagcccca cggatatgac cagcctggca ccgagccttt 500

ggacctgcac aacaatggcc acacagtgca actctctctg ccctctaccc 550

tgtatctggg tggacttccc cgaaaatatg tagctgccca gctccacctg 600

cactggggtc agaaaggatc cccaggggggg tcagaacacc agatcaacag 650

tgaagccaca tttgcagagc tccacattgt acattatgac tctgattcct 700

atgacagctt gagtgaggct gctgagaggc ctcagggcct ggctgtcctg 750

ggcatcctaa ttgaggtggg tgagactaag aatatagctt atgaacacat 800

tctgagtcac ttgcatgaag tcaggcataa agatcagaag acctcagtgc 850
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107

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ctcccttcaa cctaagagag ctgctcccca aacagctggg gcagtacttc 900

cgctacaatg gctcgctcac aactcccct tgctaccaga gtgtgctctg 950

gacagttttt tatagaaggt cccagatttc aatggaacag ctggaaaagc 1000

ttcaggggac attgttctcc acagaagagg agccctctaa gcttctggta 1050

cagaactacc gagcccttca gcctctcaat cagcgcatgg tctttgcttc 1100

tttcatccaa gcaggatcct cgtataccac aggtgaaatg ctgagtctag 1150

gtgtaggaat cttggttggc tgtctctgcc ttctcctggc tgtttatttc 1200

attgctagaa agattcggaa gaagaggctg gaaaaccgaa agagtgtggt 1250

cttcacctca gcacaagcca cgactgaggc ataaattcct tctcagatac 1300

catggatgtg gatgacttcc cttcatgcct atcaggaagc tctaaaatg 1350

gggtgtagga tctggccaga aacactgtag gagtagtaag cagatgtcct 1400

ccttcccctg gacatctctt agagaggaat ggacccaggc tgtcattcca 1450

ggaagaactg cagagccttc agcctctcca aacatgtagg aggaaatgag 1500

gaaatcgctg tgttgttaat gcagaganca aactctgttt agttgcaggg 1550

gaagtttggg atataccca aagtcctcta ccccctcact tttatggccc 1600

tttccctaga tatactgcgg gatctctcct taggataaag agttgctgtt 1650

gaagttgtat atttttgatc aatatatttg gaaattaaag tttctgactt 1700

t 1701

<210> 74
<211> 337
<212> PRT
<213> Homo Sapien

<400> 74
 Met Leu Phe Ser Ala Leu Leu Leu Glu Val Ile Trp Ile Leu Ala
  1               5                  10                  15

 Ala Asp Gly Gly Gln His Trp Thr Tyr Glu Gly Pro His Gly Gln
                 20                  25                  30

 Asp His Trp Pro Ala Ser Tyr Pro Glu Cys Gly Asn Asn Ala Gln
                 35                  40                  45

 Ser Pro Ile Asp Ile Gln Thr Asp Ser Val Thr Phe Asp Pro Asp
                 50                  55                  60

 Leu Pro Ala Leu Gln Pro His Gly Tyr Asp Gln Pro Gly Thr Glu
                 65                  70                  75
```

Pro Leu Asp Leu His Asn Asn Gly His Thr Val Gln Leu Ser Leu
                  80   85   90

Pro Ser Thr Leu Tyr Leu Gly Gly Leu Pro Arg Lys Tyr Val Ala
                  95   100   105

Ala Gln Leu His Leu His Trp Gly Gln Lys Gly Ser Pro Gly Gly
                 110   115   120

Ser Glu His Gln Ile Asn Ser Glu Ala Thr Phe Ala Glu Leu His
                 125   130   135

Ile Val His Tyr Asp Ser Asp Ser Tyr Asp Ser Leu Ser Glu Ala
                 140   145   150

Ala Glu Arg Pro Gln Gly Leu Ala Val Leu Gly Ile Leu Ile Glu
                 155   160   165

Val Gly Glu Thr Lys Asn Ile Ala Tyr Glu His Ile Leu Ser His
                 170   175   180

Leu His Glu Val Arg His Lys Asp Gln Lys Thr Ser Val Pro Pro
                 185   190   195
Phe Asn Leu Arg Glu Leu Leu Pro Lys Gln Leu Gly Gln Tyr Phe
                 200   205   210

Arg Tyr Asn Gly Ser Leu Thr Thr Pro Pro Cys Tyr Gln Ser Val
                 215   220   225

Leu Trp Thr Val Phe Tyr Arg Arg Ser Gln Ile Ser Met Glu Gln
                 230   235   240

Leu Glu Lys Leu Gln Gly Thr Leu Phe Ser Thr Glu Glu Glu Pro
                 245   250   255

Ser Lys Leu Leu Val Gln Asn Tyr Arg Ala Leu Gln Pro Leu Asn
                 260   265   270

Gln Arg Met Val Phe Ala Ser Phe Ile Gln Ala Gly Ser Ser Tyr
                 275   280   285

Thr Thr Gly Glu Met Leu Ser Leu Gly Val Gly Ile Leu Val Gly
                 290   295   300

Cys Leu Cys Leu Leu Leu Ala Val Tyr Phe Ile Ala Arg Lys Ile
                 305   310   315

Arg Lys Lys Arg Leu Glu Asn Arg Lys Ser Val Val Phe Thr Ser
                 320   325   330

Ala Gln Ala Thr Thr Glu Ala
                 335

<210> 75
<211> 1743
<212> DNA

<213> Homo Sapien

<400> 75
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 cttatccatc aacatgaaga atgtcctaca atggactcca ccagagggtc 150

 ttcaaggagt taaagttact tacactgtgc agtatttcat cacaaattgg 200

 cccaccagag gtggcactga ctacagatga gaagtccatt tctgttgtcc 250

 tgacagctcc agagaagtgg aagagaaatc cagaagacct tcctgtttcc 300

 atgcaacaaa tatactccaa tctgaagtat aacgtgtctg tgttgaatac 350

 taaatcaaac agaacgtggt cccagtgtgt gaccaaccac acgctggtgc 400

 tcacctggct ggagccgaac actctttact gcgtacacgt ggagtccttc 450

 gtcccagggc cccctcgccg tgctcagcct tctgagaagc agtgtgccag 500

 gactttgaaa gatcaatcat cagagttcaa ggctaaaatc atcttctggt 550

 atgttttgcc catatctatt accgtgtttc ttttttctgt gatgggctat 600

 tccatctacc gatatatcca cgttggcaaa gagaaacacc cagcaaattt 650

 gattttgatt tatggaaatg aatttgacaa aagattcttt gtgcctgctg 700

 aaaaaatcgt gattaacttt atcaccctca atatctcgga tgattctaaa 750

 atttctcatc aggatatgag tttactggga aaaagcagtg atgtatccag 800

 ccttaatgat cctcagccca gcgggaacct gaggcccccct caggaggaag 850

 aggaggtgaa acatttaggg tatgcttcgc atttgatgga aatttttttgt 900

 gactctgaag aaaacacgga aggtacttct ctcacccagc aagagtccct 950

 cagcagaaca ataccccccgg ataaaacagt cattgaatat gaatatgatg 1000

 tcagaaccac tgacatttgt gcggggcctg aagagcagga gctcagtttg 1050

 caggaggagg tgtccacaca aggaacatta ttggagtcgc aggcagcgtt 1100

 ggcagtcttg ggcccgcaaa cgttacagta ctcatacacc cctcagctcc 1150

 aagacttaga cccccctggcg caggagcaca cagactcgga ggaggggccg 1200

 gaggaagagc catcgacgac cctggtcgac tgggatcccc aaactggcag 1250

 gctgtgtatt ccttcgctgt ccagcttcga ccaggattca gagggctgcg 1300

 agccttctga gggggatggg ctcggagagg agggtcttct atctagactc 1350
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110

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tatgaggagc cggctccaga caggccacca ggagaaaatg aaacctatct 1400

catgcaattc atggaggaat gggggttata tgtgcagatg gaaaactgat 1450

gccaacactt ccttttgcct tttgtttcct gtgcaaacaa gtgagtcacc 1500

cctttgatcc cagccataaa gtacctggga tgaaagaagt tttttccagt 1550

ttgtcagtgt ctgtgagaat tacttatttc ttttctctat tctcatagca 1600

cgtgtgtgat tggttcatgc atgtaggtct cttaacaatg atggtgggcc 1650

tctggagtcc aggggctggc cggttgttct atgcagagaa agcagtcaat 1700

aaatgtttgc cagactgggt gcagaattta ttcaggtggg tgt 1743
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<210> 76
<211> 442
<212> PRT
<213> Homo Sapien

<400> 76
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Met Ser Tyr Asn Gly Leu His Gln Arg Val Phe Lys Glu Leu Lys
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Leu Leu Thr Leu Cys Ser Ile Ser Ser Gln Ile Gly Pro Pro Glu
                 20                  25                  30

Val Ala Leu Thr Thr Asp Glu Lys Ser Ile Ser Val Val Leu Thr
                 35                  40                  45
Ala Pro Glu Lys Trp Lys Arg Asn Pro Glu Asp Leu Pro Val Ser
                 50                  55                  60

Met Gln Gln Ile Tyr Ser Asn Leu Lys Tyr Asn Val Ser Val Leu
                 65                  70                  75

Asn Thr Lys Ser Asn Arg Thr Trp Ser Gln Cys Val Thr Asn His
                 80                  85                  90

Thr Leu Val Leu Thr Trp Leu Glu Pro Asn Thr Leu Tyr Cys Val
                 95                 100                 105

His Val Glu Ser Phe Val Pro Gly Pro Pro Arg Arg Ala Gln Pro
                110                 115                 120

Ser Glu Lys Gln Cys Ala Arg Thr Leu Lys Asp Gln Ser Ser Glu
                125                 130                 135

Phe Lys Ala Lys Ile Ile Phe Trp Tyr Val Leu Pro Ile Ser Ile
                140                 145                 150

Thr Val Phe Leu Phe Ser Val Met Gly Tyr Ser Ile Tyr Arg Tyr
                155                 160                 165

Ile His Val Gly Lys Glu Lys His Pro Ala Asn Leu Ile Leu Ile
                170                 175                 180
```

Tyr Gly Asn Glu Phe Asp Lys Arg Phe Phe Val Pro Ala Glu Lys
                185   190   195

Ile Val Ile Asn Phe Ile Thr Leu Asn Ile Ser Asp Asp Ser Lys
                200   205   210

Ile Ser His Gln Asp Met Ser Leu Leu Gly Lys Ser Ser Asp Val
                215   220   225

Ser Ser Leu Asn Asp Pro Gln Pro Ser Gly Asn Leu Arg Pro Pro
                230   235   240

Gln Glu Glu Glu Glu Val Lys His Leu Gly Tyr Ala Ser His Leu
                245   250   255

Met Glu Ile Phe Cys Asp Ser Glu Glu Asn Thr Glu Gly Thr Ser
                260   265   270

Leu Thr Gln Gln Glu Ser Leu Ser Arg Thr Ile Pro Pro Asp Lys
                275   280   285

Thr Val Ile Glu Tyr Glu Tyr Asp Val Arg Thr Thr Asp Ile Cys
                290   295   300

Ala Gly Pro Glu Glu Gln Glu Leu Ser Leu Gln Glu Glu Val Ser
                305   310   315

Thr Gln Gly Thr Leu Leu Glu Ser Gln Ala Ala Leu Ala Val Leu
                320   325   330

Gly Pro Gln Thr Leu Gln Tyr Ser Tyr Thr Pro Gln Leu Gln Asp
                335   340   345

Leu Asp Pro Leu Ala Gln Glu His Thr Asp Ser Glu Glu Gly Pro
                350   355   360

Glu Glu Glu Pro Ser Thr Thr Leu Val Asp Trp Asp Pro Gln Thr
                365   370   375

Gly Arg Leu Cys Ile Pro Ser Leu Ser Ser Phe Asp Gln Asp Ser
                380   385   390

Glu Gly Cys Glu Pro Ser Glu Gly Asp Gly Leu Gly Glu Glu Gly
                395   400   405

Leu Leu Ser Arg Leu Tyr Glu Glu Pro Ala Pro Asp Arg Pro Pro
                410   415   420

Gly Glu Asn Glu Thr Tyr Leu Met Gln Phe Met Glu Glu Trp Gly
                425   430   435

Leu Tyr Val Gln Met Glu Asn
                440

<210> 77
<211> 1636
<212> DNA

112

<213> Homo Sapien

<400> 77
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gctgccctct gacacctggg aagatggccg gcccgtggac cttcaccctt 100

ctctgtggtt tgctggcagc caccttgatc caagccaccc tcagtcccac 150

tgcagttctc atcctcggcc caaaagtcat caaagaaaag ctgacacagg 200

agctgaagga ccacaacgcc accagcatcc tgcagcagct gccgctgctc 250

agtgccatgc gggaaaagcc agccggaggc atccctgtgc tgggcagcct 300

ggtgaacacc gtcctgaagc acatcatctg gctgaaggtc atcacagcta 350

acatcctcca gctgcaggtg aagccctcgg ccaatgacca ggagctgcta 400

gtcaagatcc ccctggacat ggtggctgga ttcaacacgc ccctggtcaa 450

gaccatcgtg gagttccaca tgacgactga ggcccaagcc accatccgca 500

tggacaccag tgcaagtggc cccacccgcc tggtcctcag tgactgtgcc 550

accagccatg ggagcctgcg catccaactg ctgtataagc tctccttcct 600

ggtgaacgcc ttagctaagc aggtcatgaa cctcctagtg ccatccctgc 650

ccaatctagt gaaaaaccag ctgtgtcccg tgatcgaggc ttccttcaat 700

ggcatgtatg cagacctcct gcagctggtg aaggtgccca tttccctcag 750

cattgaccgt ctggagtttg accttctgta tcctgccatc aagggtgaca 800

ccattcagct ctacctgggg gccaagttgt tggactcaca gggaaaggtg 850
accaagtggt tcaataactc tgcagcttcc ctgacaatgc ccaccctgga 900

caacatcccg ttcagcctca tcgtgagtca ggacgtggtg aaagctgcag 950

tggctgctgt gctctctcca gaagaattca tggtcctgtt ggactctgtg 1000

cttcctgaga gtgcccatcg gctgaagtca agcatcgggc tgatcaatga 1050

aaaggctgca gataagctgg gatctaccca gatcgtgaag atcctaactc 1100

aggacactcc cgagtttttt atagaccaag gccatgccaa ggtggcccaa 1150

ctgatcgtgc tggaagtgtt tccctccagt gaagccctcc gccctttgtt 1200

caccctgggc atcgaagcca gctcggaagc tcagttttac accaaaggtg 1250

accaacttat actcaacttg aataacatca gctctgatcg gatccagctg 1300

atgaactctg ggattggctg gttccaacct gatgttctga aaaacatcat 1350

cactgagatc atccactcca tcctgctgcc gaaccagaat ggcaaattaa 1400
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113

gatctggggt cccagtgtca ttggtgaagg ccttgggatt cgaggcagct 1450

gagtcctcac tgaccaagga tgcccttgtg cttactccag cctccttgtg 1500

gaaacccagc tctcctgtct cccagtgaag acttggatgg cagccatcag 1550

ggaaggctgg gtcccagctg ggagtatggg tgtgagctct atagaccatc 1600

cctctctgca atcaataaac acttgcctgt gaaaaa 1636

<210> 78
<211> 484
<212> PRT
<213> Homo Sapien

<400> 78
Met Ala Gly Pro Trp Thr Phe Thr Leu Leu Cys Gly Leu Leu Ala
 1   5   10   15

Ala Thr Leu Ile Gln Ala Thr Leu Ser Pro Thr Ala Val Leu Ile
                20   25   30

Leu Gly Pro Lys Val Ile Lys Glu Lys Leu Thr Gln Glu Leu Lys
                35   40   45

Asp His Asn Ala Thr Ser Ile Leu Gln Gln Leu Pro Leu Leu Ser
                50   55   60

Ala Met Arg Glu Lys Pro Ala Gly Gly Ile Pro Val Leu Gly Ser
                65   70   75

Leu Val Asn Thr Val Leu Lys His Ile Ile Trp Leu Lys Val Ile
                80   85   90

Thr Ala Asn Ile Leu Gln Leu Gln Val Lys Pro Ser Ala Asn Asp
                95   100   105

Gln Glu Leu Leu Val Lys Ile Pro Leu Asp Met Val Ala Gly Phe
                110   115   120

Asn Thr Pro Leu Val Lys Thr Ile Val Glu Phe His Met Thr Thr
                125   130   135

Glu Ala Gln Ala Thr Ile Arg Met Asp Thr Ser Ala Ser Gly Pro
                140   145   150

Thr Arg Leu Val Leu Ser Asp Cys Ala Thr Ser His Gly Ser Leu
                155   160   165

Arg Ile Gln Leu Leu Tyr Lys Leu Ser Phe Leu Val Asn Ala Leu
                170   175   180

Ala Lys Gln Val Met Asn Leu Leu Val Pro Ser Leu Pro Asn Leu
                185   190   195

Val Lys Asn Gln Leu Cys Pro Val Ile Glu Ala Ser Phe Asn Gly

114

Met Tyr Ala Asp Leu Leu Gln Leu Val Lys Val Pro Ile Ser Leu
                215   220   225

Ser Ile Asp Arg Leu Glu Phe Asp Leu Leu Tyr Pro Ala Ile Lys
                230   235   240

Gly Asp Thr Ile Gln Leu Tyr Leu Gly Ala Lys Leu Leu Asp Ser
                245   250   255

Gln Gly Lys Val Thr Lys Trp Phe Asn Asn Ser Ala Ala Ser Leu
                260   265   270

Thr Met Pro Thr Leu Asp Asn Ile Pro Phe Ser Leu Ile Val Ser
                275   280   285

Gln Asp Val Val Lys Ala Ala Val Ala Ala Val Leu Ser Pro Glu
                290   295   300

Glu Phe Met Val Leu Leu Asp Ser Val Leu Pro Glu Ser Ala His
                305   310   315

Arg Leu Lys Ser Ser Ile Gly Leu Ile Asn Glu Lys Ala Ala Asp
                320   325   330

Lys Leu Gly Ser Thr Gln Ile Val Lys Ile Leu Thr Gln Asp Thr
                335   340   345

Pro Glu Phe Phe Ile Asp Gln Gly His Ala Lys Val Ala Gln Leu
                350   355   360

Ile Val Leu Glu Val Phe Pro Ser Ser Glu Ala Leu Arg Pro Leu
                365   370   375

Phe Thr Leu Gly Ile Glu Ala Ser Ser Glu Ala Gln Phe Tyr Thr
                380   385   390

Lys Gly Asp Gln Leu Ile Leu Asn Leu Asn Asn Ile Ser Ser Asp
                395   400   405

Arg Ile Gln Leu Met Asn Ser Gly Ile Gly Trp Phe Gln Pro Asp
                410   415   420

Val Leu Lys Asn Ile Ile Thr Glu Ile Ile His Ser Ile Leu Leu
                425   430   435

Pro Asn Gln Asn Gly Lys Leu Arg Ser Gly Val Pro Val Ser Leu
                440   445   450

Val Lys Ala Leu Gly Phe Glu Ala Ala Glu Ser Ser Leu Thr Lys
                455   460   465

Asp Ala Leu Val Leu Thr Pro Ala Ser Leu Trp Lys Pro Ser Ser
                470   475   480

Pro Val Ser Gln

<210> 79
<211> 1475
<212> DNA
<213> Homo Sapien

<400> 79
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tcaaggagca agagcttcag cctgaagaca agggagcagt ccctgaagac 100

gcttctactg agaggtctgc catggcctct cttggcctcc aacttgtggg 150

ctacatccta ggccttctgg ggcttttggg cacactggtt gccatgctgc 200

tccccagctg gaaaacaagt tcttatgtcg gtgccagcat tgtgacagca 250

gttggcttct ccaagggcct ctggatggaa tgtgccacac acagcacagg 300

catcacccag tgtgacatct atagcaccct tctgggcctg cccgctgaca 350

tccaggctgc ccaggccatg atggtgacat ccagtgcaat ctcctccctg 400

gcctgcatta tctctgtggt gggcatgaga tgcacagtct tctgccagga 450

atcccgagcc aaagacagag tggcggtagc aggtggagtc tttttcatcc 500

ttggaggcct cctgggattc attcctgttg cctggaatct tcatgggatc 550

ctacgggact tctactcacc actggtgcct gacagcatga aatttgagat 600

tggagaggct ctttacttgg gcattatttc ttccctgttc tccctgatag 650

ctggaatcat cctctgcttt tcctgctcat cccagagaaa tcgctccaac 700

tactacgatg cctaccaagc ccaacctctt gccacaagga gctctccaag 750

gcctggtcaa cctcccaaag tcaagagtga gttcaattcc tacagcctga 800

cagggtatgt gtgaagaacc aggggccaga gctggggggt ggctgggtct 850

gtgaaaaaca gtggacagca ccccgagggc cacaggtgag ggacactacc 900

actggatcgt gtcagaaggt gctgctgagg atagactgac tttggccatt 950
ggattgagca aaggcagaaa tgggggctag tgtaacagca tgcaggttga 1000

attgccaagg atgctcgcca tgccagcctt tctgttttcc tcaccttgct 1050

gctcccctgc cctaagtccc caaccctcaa cttgaaaccc cattccctta 1100

agccaggact cagaggatcc ctttgccctc tggtttacct gggactccat 1150

ccccaaaccc actaatcaca tcccactgac tgaccctctg tgatcaaaga 1200

ccctctctct ggctgaggtt ggctcttagc tcattgctgg ggatgggaag 1250

gagaagcagt ggcttttgtg ggcattgctc taacctactt ctcaagcttc 1300

cctccaaaga aactgattgg ccctggaacc tccatcccac tcttgttatg 1350

actccacagt gtccagacta atttgtgcat gaactgaaat aaaaccatcc 1400

tacggtatcc agggaacaga aagcaggatg caggatggga ggacaggaag 1450

gcagcctggg acatttaaaa aaata 1475

<210> 80
<211> 230
<212> PRT
<213> Homo Sapien

<400> 80
```
Met Ala Ser Leu Gly Leu Gln Leu Val Gly Tyr Ile Leu Gly Leu
 1               5                  10                  15

Leu Gly Leu Leu Gly Thr Leu Val Ala Met Leu Leu Pro Ser Trp
                20                  25                  30

Lys Thr Ser Ser Tyr Val Gly Ala Ser Ile Val Thr Ala Val Gly
                35                  40                  45

Phe Ser Lys Gly Leu Trp Met Glu Cys Ala Thr His Ser Thr Gly
                50                  55                  60

Ile Thr Gln Cys Asp Ile Tyr Ser Thr Leu Leu Gly Leu Pro Ala
                65                  70                  75

Asp Ile Gln Ala Ala Gln Ala Met Met Val Thr Ser Ser Ala Ile
                80                  85                  90

Ser Ser Leu Ala Cys Ile Ile Ser Val Val Gly Met Arg Cys Thr
                95                  100                 105

Val Phe Cys Gln Glu Ser Arg Ala Lys Asp Arg Val Ala Val Ala
                110                 115                 120

Gly Gly Val Phe Phe Ile Leu Gly Gly Leu Leu Gly Phe Ile Pro
                125                 130                 135

Val Ala Trp Asn Leu His Gly Ile Leu Arg Asp Phe Tyr Ser Pro
                140                 145                 150

Leu Val Pro Asp Ser Met Lys Phe Glu Ile Gly Glu Ala Leu Tyr
                155                 160                 165
Leu Gly Ile Ile Ser Ser Leu Phe Ser Leu Ile Ala Gly Ile Ile
                170                 175                 180

Leu Cys Phe Ser Cys Ser Ser Gln Arg Asn Arg Ser Asn Tyr Tyr
                185                 190                 195

Asp Ala Tyr Gln Ala Gln Pro Leu Ala Thr Arg Ser Ser Pro Arg
                200                 205                 210
```

```
Pro Gly Gln Pro Pro Lys Val Lys Ser Glu Phe Asn Ser Tyr Ser
                215                 220                 225

Leu Thr Gly Tyr Val
                230

<210> 81
<211> 1732
<212> DNA
<213> Homo Sapien

<400> 81
 cccacgcgtc cgcgcctctc ccttctgctg gaccttcctt cgtctctcca 50

 tctctccctc ctttccccgc gttctctttc cacctttctc ttcttcccac 100

 cttagacctc ccttcctgcc ctcctttcct gcccaccgct gcttcctggc 150

 ccttctccga ccccgctcta gcagcagacc tcctggggtc tgtgggttga 200

 tctgtggccc ctgtgcctcc gtgtcctttt cgtctccctt cctcccgact 250

 ccgctcccgg accagcggcc tgaccctggg gaaaggatgg ttcccgaggt 300

 gagggtcctc tcctccttgc tgggactcgc gctgctctgg ttccccctgg 350

 actcccacgc tcgagcccgc ccagacatgt tctgcctttt ccatgggaag 400

 agatactccc ccggcgagag ctggcacccc tacttggagc cacaaggcct 450

 gatgtactgc ctgcgctgta cctgctcaga gggcgcccat gtgagttgtt 500

 accgcctcca ctgtccgcct gtccactgcc cccagcctgt gacggagcca 550

 cagcaatgct gtcccaagtg tgtggaacct cacactccct ctggactccg 600

 ggccccacca aagtcctgcc agcacaacgg gaccatgtac caacacggag 650

 agatcttcag tgcccatgag ctgttcccct cccgcctgcc caaccagtgt 700

 gtcctctgca gctgcacaga gggccagatc tactgcggcc tcacaacctg 750

 ccccgaacca ggctgcccag cacccctccc actgccagac tcctgctgcc 800

 aagcctgcaa agatgaggca agtgagcaat cggatgaaga ggacagtgtg 850

 cagtcgctcc atggggtgag acatcctcag gatccatgtt ccagtgatgc 900

 tgggagaaag agaggcccgg gcacccccagc ccccactggc ctcagcgccc 950

 ctctgagctt catccctcgc cacttcagac ccaagggagc aggcagcaca 1000
 actgtcaaga tcgtcctgaa ggagaaacat aagaaagcct gtgtgcatgg 1050

 cgggaagacg tactcccacg gggaggtgtg gcacccggcc ttccgtgcct 1100

 tcggccccctt gccctgcatc ctatgcacct gtgaggatgg ccgccaggac 1150


                              118
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tgccagcgtg tgacctgtcc caccgagtac ccctgccgtc accccgagaa 1200

agtggctggg aagtgctgca agatttgccc agaggacaaa gcagaccctg 1250

gccacagtga gatcagttct accaggtgtc ccaaggcacc gggccgggtc 1300

ctcgtccaca catcggtatc cccaagccca gacaacctgc gtcgctttgc 1350

cctggaacac gaggcctcgg acttggtgga gatctacctc tggaagctgg 1400

taaaagatga ggaaactgag gctcagagag gtgaagtacc tggcccaagg 1450

ccacacagcc agaatcttcc acttgactca gatcaagaaa gtcaggaagc 1500

aagacttcca gaaagaggca cagcacttcc gactgctcgc tggcccccac 1550

gaaggtcact ggaacgtctt cctagcccag accctggagc tgaaggtcac 1600

ggccagtcca gacaaagtga ccaagacata acaaagacct aacagttgca 1650

gatatgagct gtataattgt tgttattata tattaataaa taagaagttg 1700

cattaccctc aaaaaaaaaa aaaaaaaaaa aa 1732

<210> 82
<211> 451
<212> PRT
<213> Homo Sapien

<400> 82
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Met Val Pro Glu Val Arg Val Leu Ser Ser Leu Leu Gly Leu Ala
 1               5                  10                  15

Leu Leu Trp Phe Pro Leu Asp Ser His Ala Arg Ala Arg Pro Asp
                20                  25                  30

Met Phe Cys Leu Phe His Gly Lys Arg Tyr Ser Pro Gly Glu Ser
                35                  40                  45

Trp His Pro Tyr Leu Glu Pro Gln Gly Leu Met Tyr Cys Leu Arg
                50                  55                  60

Cys Thr Cys Ser Glu Gly Ala His Val Ser Cys Tyr Arg Leu His
                65                  70                  75

Cys Pro Pro Val His Cys Pro Gln Pro Val Thr Glu Pro Gln Gln
                80                  85                  90

Cys Cys Pro Lys Cys Val Glu Pro His Thr Pro Ser Gly Leu Arg
                95                  100                 105

Ala Pro Pro Lys Ser Cys Gln His Asn Gly Thr Met Tyr Gln His
                110                 115                 120

Gly Glu Ile Phe Ser Ala His Glu Leu Phe Pro Ser Arg Leu Pro
                125                 130                 135
```

```
Asn Gln Cys Val Leu Cys Ser Cys Thr Glu Gly Gln Ile Tyr Cys
              140                 145                     150

Gly Leu Thr Thr Cys Pro Glu Pro Gly Cys Pro Ala Pro Leu Pro
              155                 160                     165

Leu Pro Asp Ser Cys Cys Gln Ala Cys Lys Asp Glu Ala Ser Glu
              170                 175                     180

Gln Ser Asp Glu Glu Asp Ser Val Gln Ser Leu His Gly Val Arg
              185                 190                     195

His Pro Gln Asp Pro Cys Ser Ser Asp Ala Gly Arg Lys Arg Gly
              200                 205                     210

Pro Gly Thr Pro Ala Pro Thr Gly Leu Ser Ala Pro Leu Ser Phe
              215                 220                     225

Ile Pro Arg His Phe Arg Pro Lys Gly Ala Gly Ser Thr Thr Val
              230                 235                     240

Lys Ile Val Leu Lys Glu Lys His Lys Lys Ala Cys Val His Gly
              245                 250                     255

Gly Lys Thr Tyr Ser His Gly Glu Val Trp His Pro Ala Phe Arg
              260                 265                     270

Ala Phe Gly Pro Leu Pro Cys Ile Leu Cys Thr Cys Glu Asp Gly
              275                 280                     285

Arg Gln Asp Cys Gln Arg Val Thr Cys Pro Thr Glu Tyr Pro Cys
              290                 295                     300

Arg His Pro Glu Lys Val Ala Gly Lys Cys Cys Lys Ile Cys Pro
              305                 310                     315

Glu Asp Lys Ala Asp Pro Gly His Ser Glu Ile Ser Ser Thr Arg
              320                 325                     330

Cys Pro Lys Ala Pro Gly Arg Val Leu Val His Thr Ser Val Ser
              335                 340                     345

Pro Ser Pro Asp Asn Leu Arg Arg Phe Ala Leu Glu His Glu Ala
              350                 355                     360

Ser Asp Leu Val Glu Ile Tyr Leu Trp Lys Leu Val Lys Asp Glu
              365                 370                     375

Glu Thr Glu Ala Gln Arg Gly Glu Val Pro Gly Pro Arg Pro His
              380                 385                     390

Ser Gln Asn Leu Pro Leu Asp Ser Asp Gln Glu Ser Gln Glu Ala
              395                 400                     405

Arg Leu Pro Glu Arg Gly Thr Ala Leu Pro Thr Ala Arg Trp Pro
              410                 415                     420
```

120

Pro Arg Arg Ser Leu Glu Arg Leu Pro Ser Pro Asp Pro Gly Ala
            425   430   435

Glu Gly His Gly Gln Ser Arg Gln Ser Asp Gln Asp Ile Thr Lys
            440   445   450

Thr

<210> 83
<211> 2052
<212> DNA
<213> Homo Sapien

<400> 83
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 ccgctcacgc agagcctctc cgtggcttcc gcaccttgag cattaggcca 100

 gttctcctct tctctctaat ccatccgtca cctctcctgt catccgtttc 150

 catgccgtga ggtccattca cagaacacat ccatggctct catgctcagt 200

 ttggttctga gtctcctcaa gctgggatca gggcagtggc aggtgtttgg 250

 gccagacaag cctgtccagg ccttggtggg ggaggacgca gcattctcct 300

 gtttcctgtc tcctaagacc aatgcagagg ccatggaagt gcggttcttc 350

 aggggccagt tctctagcgt ggtccacctc tacagggacg ggaaggacca 400

 gccatttatg cagatgccac agtatcaagg caggacaaaa ctggtgaagg 450

 attctattgc ggaggggcgc atctctctga ggctggaaaa cattactgtg 500

 ttggatgctg gcctctatgg gtgcaggatt agttcccagt cttactacca 550

 gaaggccatc tgggagctac aggtgtcagc actgggctca gttcctctca 600

 tttccatcac gggatatgtt gatagagaca tccagctact ctgtcagtcc 650

 tcgggctggt tcccccggcc cacagcgaag tggaaaggtc cacaaggaca 700

 ggatttgtcc acagactcca ggacaaacag agacatgcat ggcctgtttg 750

 atgtggagat ctctctgacc gtccaagaga acgccgggag catatcctgt 800

 tccatgcggc atgctcatct gagccgagag gtggaatcca gggtacagat 850

 aggagatacc tttttcgagc ctatatcgtg gcacctggct accaaagtac 900

 tgggaatact ctgctgtggc ctattttttg gcattgttgg actgaagatt 950

 ttcttctcca aattccagtg gaaaatccag gcggaactgg actggagaag 1000

 aaagcacgga caggcagaat tgagagacgc ccggaaacac gcagtggagg 1050

                    121

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tgactctgga tccagagacg gctcacccga agctctgcgt ttctgatctg 1100

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gagatttaca aggaagagtg tggtggcttc tcagagtttc caagcaggga 1200

aacattactg ggaggtggac ggaggacaca ataaaaggtg gcgcgtggga 1250

gtgtgccggg atgatgtgga caggaggaag gagtacgtga ctttgtctcc 1300

cgatcatggg tactgggtcc tcagactgaa tggagaacat ttgtatttca 1350

cattaaatcc ccgtttttatc agcgtcttcc ccaggacccc acctacaaaa 1400

atagggggtct tcctggacta tgagtgtggg accatctcct tcttcaacat 1450

aaatgaccag tcccttattt ataccctgac atgtcggttt gaaggcttat 1500

tgaggcccta cattgagtat ccgtcctata atgagcaaaa tggaactccc 1550

atagtcatct gcccagtcac ccaggaatca gagaaagagg cctcttggca 1600

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caaccacgcc cttcctcccc aggggtgaaa tgtaggatga atcacatccc 1700

acattcttct ttagggatat taaggtctct ctcccagatc caaagtcccg 1750

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cattacattt agtttgctct cactccatct ggctaagtga tcttgaaata 1900

ccacctctca ggtgaagaac cgtcaggaat tcccatctca caggctgtgg 1950

tgtagattaa gtagacaagg aatgtgaata atgcttagat cttattgatg 2000

acagagtgta tcctaatggt ttgttcatta tattacactt tcagtaaaaa 2050

aa 2052
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<210> 84
<211> 500
<212> PRT
<213> Homo Sapien

<400> 84

```
 Met Ala Leu Met Leu Ser Leu Val Leu Ser Leu Leu Lys Leu Gly
  1               5                  10                  15

 Ser Gly Gln Trp Gln Val Phe Gly Pro Asp Lys Pro Val Gln Ala
                 20                  25                  30

 Leu Val Gly Glu Asp Ala Ala Phe Ser Cys Phe Leu Ser Pro Lys
                 35                  40                  45

 Thr Asn Ala Glu Ala Met Glu Val Arg Phe Phe Arg Gly Gln Phe
```

Ser Ser Val Val His Leu Tyr Arg Asp Gly Lys Asp Gln Pro Phe
                    65   70   75

Met Gln Met Pro Gln Tyr Gln Gly Arg Thr Lys Leu Val Lys Asp
                    80   85   90

Ser Ile Ala Glu Gly Arg Ile Ser Leu Arg Leu Glu Asn Ile Thr
                    95   100   105

Val Leu Asp Ala Gly Leu Tyr Gly Cys Arg Ile Ser Ser Gln Ser
                    110   115   120

Tyr Tyr Gln Lys Ala Ile Trp Glu Leu Gln Val Ser Ala Leu Gly
                    125   130   135

Ser Val Pro Leu Ile Ser Ile Thr Gly Tyr Val Asp Arg Asp Ile
                    140   145   150

Gln Leu Leu Cys Gln Ser Ser Gly Trp Phe Pro Arg Pro Thr Ala
                    155   160   165

Lys Trp Lys Gly Pro Gln Gly Gln Asp Leu Ser Thr Asp Ser Arg
                    170   175   180

Thr Asn Arg Asp Met His Gly Leu Phe Asp Val Glu Ile Ser Leu
                    185   190   195

Thr Val Gln Glu Asn Ala Gly Ser Ile Ser Cys Ser Met Arg His
                    200   205   210

Ala His Leu Ser Arg Glu Val Glu Ser Arg Val Gln Ile Gly Asp
                    215   220   225

Thr Phe Phe Glu Pro Ile Ser Trp His Leu Ala Thr Lys Val Leu
                    230   235   240

Gly Ile Leu Cys Cys Gly Leu Phe Phe Gly Ile Val Gly Leu Lys
                    245   250   255

Ile Phe Phe Ser Lys Phe Gln Trp Lys Ile Gln Ala Glu Leu Asp
                    260   265   270

Trp Arg Arg Lys His Gly Gln Ala Glu Leu Arg Asp Ala Arg Lys
                    275   280   285

His Ala Val Glu Val Thr Leu Asp Pro Glu Thr Ala His Pro Lys
                    290   295   300

Leu Cys Val Ser Asp Leu Lys Thr Val Thr His Arg Lys Ala Pro
                    305   310   315

Gln Glu Val Pro His Ser Glu Lys Arg Phe Thr Arg Lys Ser Val
                    320   325   330

Val Ala Ser Gln Ser Phe Gln Ala Gly Lys His Tyr Trp Glu Val

123

```
Asp Gly Gly His Asn Lys Arg Trp Arg Val Gly Val Cys Arg Asp
                350                    355                    360

Asp Val Asp Arg Arg Lys Glu Tyr Val Thr Leu Ser Pro Asp His
                365                    370                    375

Gly Tyr Trp Val Leu Arg Leu Asn Gly Glu His Leu Tyr Phe Thr
                380                    385                    390

Leu Asn Pro Arg Phe Ile Ser Val Phe Pro Arg Thr Pro Pro Thr
                395                    400                    405

Lys Ile Gly Val Phe Leu Asp Tyr Glu Cys Gly Thr Ile Ser Phe
                410                    415                    420

Phe Asn Ile Asn Asp Gln Ser Leu Ile Tyr Thr Leu Thr Cys Arg
                425                    430                    435

Phe Glu Gly Leu Leu Arg Pro Tyr Ile Glu Tyr Pro Ser Tyr Asn
                440                    445                    450

Glu Gln Asn Gly Thr Pro Ile Val Ile Cys Pro Val Thr Gln Glu
                455                    460                    465

Ser Glu Lys Glu Ala Ser Trp Gln Arg Ala Ser Ala Ile Pro Glu
                470                    475                    480

Thr Ser Asn Ser Glu Ser Ser Ser Gln Ala Thr Thr Pro Phe Leu
                485                    490                    495

Pro Arg Gly Glu Met
                500
```

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<210> 85
<211> 1665
<212> DNA
<213> Homo Sapien

<400> 85
 aacagacgtt ccctcgcggc cctggcacct ctaaccccag acatgctgct 50

 gctgctgctg cccctgctct gggggaggga gagggcggaa ggacagacaa 100

 gtaaactgct gacgatgcag agttccgtga cggtgcagga aggcctgtgt 150

 gtccatgtgc cctgctcctt ctcctacccc tcgcatggct ggatttaccc 200

 tggcccagta gttcatggct actggttccg ggaaggggcc aatacagacc 250

 aggatgctcc agtggccaca aacaacccag ctcgggcagt gtgggaggag 300

 actcgggacc gattccacct ccttggggac ccacatacca agaattgcac 350

 cctgagcatc agagatgcca gaagaagtga tgcggggaga tacttctttc 400
```

```
gtatggagaa aggaagtata aaatggaatt ataaacatca ccggctctct 450

gtgaatgtga cagccttgac ccacaggccc aacatcctca tcccaggcac 500

cctggagtcc ggctgccccc agaatctgac ctgctctgtg ccctgggcct 550

gtgagcaggg gacacccct atgatctcct ggatagggac ctccgtgtcc 600

cccctggacc cctccaccac ccgctcctcg gtgctcaccc tcatcccaca 650

gccccaggac catggcacca gcctcacctg tcaggtgacc ttccctgggg 700

ccagcgtgac cacgaacaag accgtccatc tcaacgtgtc ctacccgcct 750

cagaacttga ccatgactgt cttccaagga gacggcacag tatccacagt 800

cttgggaaat ggctcatctc tgtcactccc agagggccag tctctgcgcc 850

tggtctgtgc agttgatgca gttgacagca atccccctgc caggctgagc 900

ctgagctgga gaggcctgac cctgtgcccc tcacagccct caaacccggg 950

ggtgctggag ctgccttggg tgcacctgag ggatgcagct gaattcacct 1000

gcagagctca gaaccctctc ggctctcagc aggtctacct gaacgtctcc 1050

ctgcagagca aagccacatc aggagtgact caggggtgg tcgggggagc 1100

tggagccaca gccctggtct tcctgtcctt ctgcgtcatc ttcgttgtag 1150

tgaggtcctg caggaagaaa tcggcaaggc cagcagcggg cgtgggagat 1200

acgggcatag aggatgcaaa cgctgtcagg ggttcagcct ctcaggggcc 1250

cctgactgaa ccttgggcag aagacagtcc cccagaccag cctcccccag 1300

cttctgcccg ctcctcagtg ggggaaggag agctccagta tgcatccctc 1350

agcttccaga tggtgaagcc ttgggactcg cggggacagg aggccactga 1400

caccgagtac tcggagatca agatccacag atgagaaact gcagagactc 1450

accctgattg agggatcaca gcccctccag gcaagggaga agtcagaggc 1500

tgattcttgt agaattaaca gccctcaacg tgatgagcta tgataacact 1550

atgaattatg tgcagagtga aaagcacaca ggctttagag tcaaagtatc 1600

tcaaacctga atccacactg tgccctccct tttatttttt taactaaaag 1650

acagacaaat tccta 1665
```

<210> 86
<211> 463
<212> PRT
<213> Homo Sapien

125

<400> 86
```
Met Leu Leu Leu Leu Leu Pro Leu Leu Trp Gly Arg Glu Arg Ala
 1               5                  10                  15

Glu Gly Gln Thr Ser Lys Leu Leu Thr Met Gln Ser Ser Val Thr
                20                  25                  30

Val Gln Glu Gly Leu Cys Val His Val Pro Cys Ser Phe Ser Tyr
                35                  40                  45

Pro Ser His Gly Trp Ile Tyr Pro Gly Pro Val Val His Gly Tyr
                50                  55                  60

Trp Phe Arg Glu Gly Ala Asn Thr Asp Gln Asp Ala Pro Val Ala
                65                  70                  75

Thr Asn Asn Pro Ala Arg Ala Val Trp Glu Glu Thr Arg Asp Arg
                80                  85                  90

Phe His Leu Leu Gly Asp Pro His Thr Lys Asn Cys Thr Leu Ser
                95                  100                 105

Ile Arg Asp Ala Arg Arg Ser Asp Ala Gly Arg Tyr Phe Phe Arg
                110                 115                 120

Met Glu Lys Gly Ser Ile Lys Trp Asn Tyr Lys His His Arg Leu
                125                 130                 135

Ser Val Asn Val Thr Ala Leu Thr His Arg Pro Asn Ile Leu Ile
                140                 145                 150

Pro Gly Thr Leu Glu Ser Gly Cys Pro Gln Asn Leu Thr Cys Ser
                155                 160                 165

Val Pro Trp Ala Cys Glu Gln Gly Thr Pro Pro Met Ile Ser Trp
                170                 175                 180

Ile Gly Thr Ser Val Ser Pro Leu Asp Pro Ser Thr Thr Arg Ser
                185                 190                 195

Ser Val Leu Thr Leu Ile Pro Gln Pro Gln Asp His Gly Thr Ser
                200                 205                 210

Leu Thr Cys Gln Val Thr Phe Pro Gly Ala Ser Val Thr Thr Asn
                215                 220                 225

Lys Thr Val His Leu Asn Val Ser Tyr Pro Pro Gln Asn Leu Thr
                230                 235                 240

Met Thr Val Phe Gln Gly Asp Gly Thr Val Ser Thr Val Leu Gly
                245                 250                 255

Asn Gly Ser Ser Leu Ser Leu Pro Glu Gly Gln Ser Leu Arg Leu
                260                 265                 270

Val Cys Ala Val Asp Ala Val Asp Ser Asn Pro Pro Ala Arg Leu
                275                 280                 285
```

126

```
Ser Leu Ser Trp Arg Gly Leu Thr Leu Cys Pro Ser Gln Pro Ser
                290                 295                 300

Asn Pro Gly Val Leu Glu Leu Pro Trp Val His Leu Arg Asp Ala
                305                 310                 315

Ala Glu Phe Thr Cys Arg Ala Gln Asn Pro Leu Gly Ser Gln Gln
                320                 325                 330

Val Tyr Leu Asn Val Ser Leu Gln Ser Lys Ala Thr Ser Gly Val
                335                 340                 345

Thr Gln Gly Val Val Gly Gly Ala Gly Ala Thr Ala Leu Val Phe
                350                 355                 360

Leu Ser Phe Cys Val Ile Phe Val Val Val Arg Ser Cys Arg Lys
                365                 370                 375

Lys Ser Ala Arg Pro Ala Ala Gly Val Gly Asp Thr Gly Ile Glu
                380                 385                 390

Asp Ala Asn Ala Val Arg Gly Ser Ala Ser Gln Gly Pro Leu Thr
                395                 400                 405

Glu Pro Trp Ala Glu Asp Ser Pro Pro Asp Gln Pro Pro Pro Ala
                410                 415                 420

Ser Ala Arg Ser Ser Val Gly Glu Gly Glu Leu Gln Tyr Ala Ser
                425                 430                 435

Leu Ser Phe Gln Met Val Lys Pro Trp Asp Ser Arg Gly Gln Glu
                440                 445                 450

Ala Thr Asp Thr Glu Tyr Ser Glu Ile Lys Ile His Arg
                455                 460
```

<210> 87
<211> 1176
<212> DNA
<213> Homo Sapien

<400> 87
```
 agaaagctgc actctgttga gctccagggc gcagtggagg gagggagtga 50

 aggagctctc tgtacccaag gaaagtgcag ctgagactca gacaagatta 100

 caatgaacca actcagcttc ctgctgtttc tcatagcgac caccagagga 150

 tggagtacag atgaggctaa tacttacttc aaggaatgga cctgttcttc 200

 gtctccatct ctgcccagaa gctgcaagga aatcaaagac gaatgtccta 250

 gtgcatttga tggcctgtat tttctccgca ctgagaatgg tgttatctac 300

 cagaccttct gtgacatgac ctctgggggt ggcggctgga ccctggtggc 350

 cagcgtgcat gagaatgaca tgcgtgggaa gtgcacggtg ggcgatcgct 400
```

127

```
ggtccagtca gcagggcagc aaagcagact acccagaggg ggacggcaac 450

tgggccaact acaacacctt tggatctgca gaggcggcca cgagcgatga 500

ctacaagaac cctggctact acgacatcca ggccaaggac ctgggcatct 550

ggcacgtgcc caataagtcc cccatgcagc actggagaaa cagctccctg 600

ctgaggtacc gcacggacac tggcttcctc cagacactgg gacataatct 650

gtttggcatc taccagaaat atccagtgaa atatggagaa ggaaagtgtt 700

ggactgacaa cggcccggtg atccctgtgg tctatgattt tggcgacgcc 750

cagaaaacag catcttatta ctcaccctat ggccagcggg aattcactgc 800

gggatttgtt cagttcaggg tatttaataa cgagagagca gccaacgcct 850

tgtgtgctgg aatgagggtc accggatgta acactgagca tcactgcatt 900

ggtggaggag gatactttcc agaggccagt ccccagcagt gtggagattt 950

ttctggtttt gattggagtg gatatggaac tcatgttggt tacagcagca 1000

gccgtgagat aactgaggca gctgtgcttc tattctatcg ttgagagttt 1050

tgtgggaggg aacccagacc tctcctccca accatgagat cccaaggatg 1100

gagaacaact tacccagtag ctagaatgtt aatggcagaa gagaaaacaa 1150

taaatcatat tgactcaaga aaaaaa 1176
```

<210> 88
<211> 313
<212> PRT
<213> Homo Sapien

<400> 88

```
 Met Asn Gln Leu Ser Phe Leu Leu Phe Leu Ile Ala Thr Thr Arg
  1               5                  10                  15

 Gly Trp Ser Thr Asp Glu Ala Asn Thr Tyr Phe Lys Glu Trp Thr
                  20                  25                  30

 Cys Ser Ser Ser Pro Ser Leu Pro Arg Ser Cys Lys Glu Ile Lys
                  35                  40                  45

 Asp Glu Cys Pro Ser Ala Phe Asp Gly Leu Tyr Phe Leu Arg Thr
                  50                  55                  60

 Glu Asn Gly Val Ile Tyr Gln Thr Phe Cys Asp Met Thr Ser Gly
                  65                  70                  75

 Gly Gly Gly Trp Thr Leu Val Ala Ser Val His Glu Asn Asp Met
                  80                  85                  90
```

```
Arg Gly Lys Cys Thr Val Gly Asp Arg Trp Ser Ser Gln Gln Gly
              95                  100                 105

Ser Lys Ala Asp Tyr Pro Glu Gly Asp Gly Asn Trp Ala Asn Tyr
             110                 115                 120

Asn Thr Phe Gly Ser Ala Glu Ala Ala Thr Ser Asp Asp Tyr Lys
             125                 130                 135

Asn Pro Gly Tyr Tyr Asp Ile Gln Ala Lys Asp Leu Gly Ile Trp
             140                 145                 150

His Val Pro Asn Lys Ser Pro Met Gln His Trp Arg Asn Ser Ser
             155                 160                 165

Leu Leu Arg Tyr Arg Thr Asp Thr Gly Phe Leu Gln Thr Leu Gly
             170                 175                 180

His Asn Leu Phe Gly Ile Tyr Gln Lys Tyr Pro Val Lys Tyr Gly
             185                 190                 195

Glu Gly Lys Cys Trp Thr Asp Asn Gly Pro Val Ile Pro Val Val
             200                 205                 210

Tyr Asp Phe Gly Asp Ala Gln Lys Thr Ala Ser Tyr Tyr Ser Pro
             215                 220                 225

Tyr Gly Gln Arg Glu Phe Thr Ala Gly Phe Val Gln Phe Arg Val
             230                 235                 240

Phe Asn Asn Glu Arg Ala Ala Asn Ala Leu Cys Ala Gly Met Arg
             245                 250                 255

Val Thr Gly Cys Asn Thr Glu His His Cys Ile Gly Gly Gly Gly
             260                 265                 270

Tyr Phe Pro Glu Ala Ser Pro Gln Gln Cys Gly Asp Phe Ser Gly
             275                 280                 285

Phe Asp Trp Ser Gly Tyr Gly Thr His Val Gly Tyr Ser Ser Ser
             290                 295                 300

Arg Glu Ile Thr Glu Ala Ala Val Leu Leu Phe Tyr Arg
             305                 310
```

<210> 89
<211> 759
<212> DNA
<213> Homo Sapien

<400> 89
 ctagatttgt cggcttgcgg ggagacttca ggagtcgctg tctctgaact 50

 tccagcctca gagaccgccg cccttgtccc cgagggccat gggccgggtc 100

 tcagggcttg tgccctctcg cttcctgacg ctcctggcgc atctggtggt 150

```
cgtcatcacc ttattctggt cccgggacag caacatacag gcctgcctgc 200

ctctcacgtt cacccccgag gagtatgaca agcaggacat tcagctggtg 250

gccgcgctct ctgtcaccct gggcctcttt gcagtggagc tggccggttt 300

cctctcagga gtctccatgt tcaacagcac ccagagcctc atctccattg 350

gggctcactg tagtgcatcc gtggccctgt ccttcttcat attcgagcgt 400

tgggagtgca ctacgtattg gtacattttt gtcttctgca gtgcccttcc 450

agctgtcact gaaatggctt tattcgtcac cgtctttggg ctgaaaaaga 500

aacccttctg attaccttca tgacgggaac ctaaggacga gcctacagg 550

ggcaagggcc gcttcgtatt cctggaagaa ggaaggcata ggcttcggtt 600

ttcccctcgg aaactgcttc tgctggagga tatgtgttgg ataattacg 650

tcttgagtct gggattatcc gcattgtatt tagtgctttg taataaaata 700

tgttttgtag taacattaag acttatatac agttttaggg gacaattaaa 750

aaaaaaaaa 759
```

<210> 90
<211> 140
<212> PRT
<213> Homo Sapien

<400> 90

```
Met Gly Arg Val Ser Gly Leu Val Pro Ser Arg Phe Leu Thr Leu
 1               5                  10                  15

Leu Ala His Leu Val Val Val Ile Thr Leu Phe Trp Ser Arg Asp
                20                  25                  30

Ser Asn Ile Gln Ala Cys Leu Pro Leu Thr Phe Thr Pro Glu Glu
                35                  40                  45

Tyr Asp Lys Gln Asp Ile Gln Leu Val Ala Ala Leu Ser Val Thr
                50                  55                  60

Leu Gly Leu Phe Ala Val Glu Leu Ala Gly Phe Leu Ser Gly Val
                65                  70                  75

Ser Met Phe Asn Ser Thr Gln Ser Leu Ile Ser Ile Gly Ala His
                80                  85                  90

Cys Ser Ala Ser Val Ala Leu Ser Phe Phe Ile Phe Glu Arg Trp
                95                 100                 105

Glu Cys Thr Thr Tyr Trp Tyr Ile Phe Val Phe Cys Ser Ala Leu
                110                 115                 120

Pro Ala Val Thr Glu Met Ala Leu Phe Val Thr Val Phe Gly Leu
```

130

Lys Lys Lys Pro Phe
              140

<210> 91
<211> 1871
<212> DNA
<213> Homo Sapien

<400> 91

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ctgggacccc gaaaagagaa ggggagagcg aggggacgag agcggaggag 50

gaagatgcaa ctgactcgct gctgcttcgt gttcctggtg cagggtagcc 100

tctatctggt catctgtggc caggatgatg gtcctcccgg ctcagaggac 150

cctgagcgtg atgaccacga gggccagccc cggccccggg tgcctcggaa 200

gcggggccac atctcaccta agtcccgccc catggccaat tccactctcc 250

tagggctgct ggccccgcct ggggaggctt ggggcattct tgggcagccc 300

cccaaccgcc cgaaccacag ccccccaccc tcagccaagg tgaagaaaat 350

ctttggctgg ggcgacttct actccaacat caagacggtg gccctgaacc 400

tgctcgtcac agggaagatt gtggaccatg caatgggac cttcagcgtc 450

cacttccaac acaatgccac aggccaggga aacatctcca tcagcctcgt 500
gcccccagt aaagctgtag agttccacca ggaacagcag atcttcatcg 550

aagccaaggc ctccaaaatc ttcaactgcc ggatggagtg ggagaaggta 600

gaacggggcc gccggacctc gctttgcacc cacgacccag ccaagatctg 650

ctcccgagac cacgctcaga gctcagccac ctggagctgc tcccagccct 700

tcaaagtcgt ctgtgtctac atcgccttct acagcacgga ctatcggctg 750

gtccagaagg tgtgcccaga ttacaactac catagtgata cccctacta 800

cccatctggg tgacccggggg caggccacag aggccaggcc agggctggaa 850

ggacaggcct gcccatgcag gagaccatct ggacaccggg cagggaaggg 900

gttgggcctc aggcagggag gggggtggag acgaggagat gccaagtggg 950

gccagggcca agtctcaagt ggcagagaaa gggtcccaag tgctggtccc 1000

aacctgaagc tgtggagtga ctagatcaca ggagcactgg aggaggagtg 1050

ggctctctgt gcagcctcac agggctttgc cacggagcca cagagagatg 1100

ctgggtcccc gaggcctgtg ggcaggccga tcagtgtggc cccagatcaa 1150

gtcatgggag gaagctaagc ccttggttct tgccatcctg aggaaagata 1200
```

```
gcaacaggga gggggagatt tcatcagtgt ggacagcctg tcaacttagg 1250

atggatggct gagagggctt cctaggagcc agtcagcagg gtggggtggg 1300

gccagaggag ctctccagcc ctgcctagtg ggcgccctga gccccttgtc 1350

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gtcttgacag attgaccatc tgtctccagc caggccaccc ctttccaaaa 1450

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acagcccatc cgcgtgctgt gtgtccctct tccaccccaa cccctgctgg 1600

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tcacctgtca gaccgggggtt ctcccggatc tggatggcgc cgccctctca 1700

gcagcgggca cgggtggggc ggggccgggc cgcagagcat gtgctggatc 1750

tgttctgtgt gtctgtctgt gggtggggggg aggggaggga agtcttgtga 1800

aaccgctgat tgctgacttt tgtgtgaaga atcgtgttct tggagcagga 1850

aataaagctt gccccggggc a 1871
```

<210> 92
<211> 252
<212> PRT
<213> Homo Sapien
<400> 92

```
Met Gln Leu Thr Arg Cys Cys Phe Val Phe Leu Val Gln Gly Ser
  1               5                  10                  15

Leu Tyr Leu Val Ile Cys Gly Gln Asp Asp Gly Pro Pro Gly Ser
             20                  25                  30

Glu Asp Pro Glu Arg Asp Asp His Glu Gly Gln Pro Arg Pro Arg
             35                  40                  45

Val Pro Arg Lys Arg Gly His Ile Ser Pro Lys Ser Arg Pro Met
             50                  55                  60

Ala Asn Ser Thr Leu Leu Gly Leu Leu Ala Pro Pro Gly Glu Ala
             65                  70                  75

Trp Gly Ile Leu Gly Gln Pro Pro Asn Arg Pro Asn His Ser Pro
             80                  85                  90

Pro Pro Ser Ala Lys Val Lys Lys Ile Phe Gly Trp Gly Asp Phe
             95                 100                 105

Tyr Ser Asn Ile Lys Thr Val Ala Leu Asn Leu Leu Val Thr Gly
            110                 115                 120
```

132

```
Lys Ile Val Asp His Gly Asn Gly Thr Phe Ser Val His Phe Gln
                125                 130                 135

His Asn Ala Thr Gly Gln Gly Asn Ile Ser Ile Ser Leu Val Pro
                140                 145                 150

Pro Ser Lys Ala Val Glu Phe His Gln Glu Gln Gln Ile Phe Ile
                155                 160                 165

Glu Ala Lys Ala Ser Lys Ile Phe Asn Cys Arg Met Glu Trp Glu
                170                 175                 180

Lys Val Glu Arg Gly Arg Arg Thr Ser Leu Cys Thr His Asp Pro
                185                 190                 195

Ala Lys Ile Cys Ser Arg Asp His Ala Gln Ser Ser Ala Thr Trp
                200                 205                 210

Ser Cys Ser Gln Pro Phe Lys Val Val Cys Val Tyr Ile Ala Phe
                215                 220                 225

Tyr Ser Thr Asp Tyr Arg Leu Val Gln Lys Val Cys Pro Asp Tyr
                230                 235                 240

Asn Tyr His Ser Asp Thr Pro Tyr Tyr Pro Ser Gly
                245                 250
```

<210> 93
<211> 902
<212> DNA
<213> Homo Sapien

<400> 93
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cggtggccat gactgcggcc gtgttcttcg gctgcgcctt cattgccttc  50

gggcctgcgc tcgccctttta tgtcttcacc atcgccatcg agccgttgcg 100

tatcatcttc ctcatcgccg gagctttctt ctggttggtg tctctactga 150

tttcgtccct tgtttggttc atggcaagag tcattattga caacaaagat 200

ggaccaacac agaaatatct gctgatcttt ggagcgtttg tctctgtcta 250

tatccaagaa atgttccgat ttgcatatta taaactctta aaaaaagcca 300

gtgaaggttt gaagagtata aacccaggtg agacagcacc ctctatgcga 350

ctgctggcct atgtttctgg cttgggcttt ggaatcatga gtggagtatt 400

ttcctttgtg aataccctat ctgactcctt ggggccaggc acagtgggca 450

ttcatggaga ttctcctcaa ttcttccttt attcagcttt catgacgctg 500

gtcattatct tgctgcatgt attctggggc attgtatttt ttgatggctg 550

tgagaagaaa aagtggggca tcctccttat cgttctcctg acccacctgc 600
```

133

```
tggtgtcagc ccagaccttc ataagttctt attatggaat aaacctggcg 650

tcagcattta taatcctggt gctcatgggc acctgggcat tcttagctgc 700

gggaggcagc tgccgaagcc tgaaactctg cctgctctgc caagacaaga 750

actttcttct ttacaaccag cgctccagat aacctcaggg aaccagcact 800

tcccaaaccg cagactacat ctttagagga agcacaactg tgcctttttc 850

tgaaaatccc tttttctggt ggaattgaga aagaaataaa actatgcaga 900

ta 902
```

<210> 94
<211> 257
<212> PRT
<213> Homo Sapien

<400> 94

```
Met Thr Ala Ala Val Phe Phe Gly Cys Ala Phe Ile Ala Phe Gly
 1               5                  10                  15

Pro Ala Leu Ala Leu Tyr Val Phe Thr Ile Ala Ile Glu Pro Leu
                20                  25                  30

Arg Ile Ile Phe Leu Ile Ala Gly Ala Phe Phe Trp Leu Val Ser
                35                  40                  45

Leu Leu Ile Ser Ser Leu Val Trp Phe Met Ala Arg Val Ile Ile
                50                  55                  60

Asp Asn Lys Asp Gly Pro Thr Gln Lys Tyr Leu Leu Ile Phe Gly
                65                  70                  75

Ala Phe Val Ser Val Tyr Ile Gln Glu Met Phe Arg Phe Ala Tyr
                80                  85                  90

Tyr Lys Leu Leu Lys Lys Ala Ser Glu Gly Leu Lys Ser Ile Asn
                95                  100                 105

Pro Gly Glu Thr Ala Pro Ser Met Arg Leu Leu Ala Tyr Val Ser
                110                 115                 120

Gly Leu Gly Phe Gly Ile Met Ser Gly Val Phe Ser Phe Val Asn
                125                 130                 135

Thr Leu Ser Asp Ser Leu Gly Pro Gly Thr Val Gly Ile His Gly
                140                 145                 150

Asp Ser Pro Gln Phe Phe Leu Tyr Ser Ala Phe Met Thr Leu Val
                155                 160                 165

Ile Ile Leu Leu His Val Phe Trp Gly Ile Val Phe Phe Asp Gly
                170                 175                 180
```

134

```
Cys Glu Lys Lys Lys Trp Gly Ile Leu Leu Ile Val Leu Leu Thr
                185             190                 195

His Leu Leu Val Ser Ala Gln Thr Phe Ile Ser Ser Tyr Tyr Gly
                200             205                 210

Ile Asn Leu Ala Ser Ala Phe Ile Ile Leu Val Leu Met Gly Thr
                215             220                 225

Trp Ala Phe Leu Ala Ala Gly Gly Ser Cys Arg Ser Leu Lys Leu
                230             235                 240

Cys Leu Leu Cys Gln Asp Lys Asn Phe Leu Leu Tyr Asn Gln Arg
                245             250                 255

Ser Arg
```

<210> 95
<211> 1073
<212> DNA
<213> Homo Sapien

<400> 95

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aatttttcac cagagtaaac ttgagaaacc aactggacct tgagtattgt 50

acattttgcc tcgtggaccc aaaggtagca atctgaaaca tgaggagtac 100

gattctactg ttttgtcttc taggatcaac tcggtcatta ccacagctca 150

aacctgcttt gggactccct cccacaaaac tggctccgga tcagggaaca 200

ctaccaaacc aacagcagtc aaatcaggtc tttccttctt taagtctgat 250

accattaaca cagatgctca cactggggcc agatctgcat ctgttaaatc 300

ctgctgcagg aatgacacct ggtacccaga cccacccatt gaccctggga 350

gggttgaatg tacaacagca actgcaccca catgtgttac caatttttgt 400

cacacaactt ggagcccagg gcactatcct aagctcagag gaattgccac 450

aaatcttcac gagcctcatc atccattcct tgttcccggg aggcatcctg 500

cccaccagtc aggcaggggc taatccagat gtccaggatg gaagccttcc 550

agcaggagga gcaggtgtaa atcctgccac ccagggaacc ccagcaggcc 600

gcctcccaac tcccagtggc acagatgacg actttgcagt gaccacccct 650

gcaggcatcc aaaggagcac acatgccatc gaggaagcca ccacagaatc 700

agcaaatgga attcagtaag ctgtttcaaa ttttttcaac taagctgcct 750

cgaatttggt gatacatgtg aatctttatc attgattata ttatggaata 800

gattgagaca cattggatag tcttagaaga aattaattct taatttacct 850
```

gaaaatattc ttgaaatttc agaaaatatg ttctatgtag agaatcccaa 900

cttttaaaaa caataattca atggataaat ctgtctttga aatataacat 950

tatgctgcct ggatgatatg catattaaaa catatttgga aaactggaaa 1000

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1050

aaaaaaaaaa aaaaaaaaaa aaa 1073

<210> 96
<211> 209
<212> PRT
<213> Homo Sapien

<400> 96
 Met Arg Ser Thr Ile Leu Leu Phe Cys Leu Leu Gly Ser Thr Arg
  1   5   10   15

 Ser Leu Pro Gln Leu Lys Pro Ala Leu Gly Leu Pro Pro Thr Lys
                  20   25   30

 Leu Ala Pro Asp Gln Gly Thr Leu Pro Asn Gln Gln Gln Ser Asn
                  35   40   45

 Gln Val Phe Pro Ser Leu Ser Leu Ile Pro Leu Thr Gln Met Leu
                  50   55   60

 Thr Leu Gly Pro Asp Leu His Leu Leu Asn Pro Ala Ala Gly Met
                  65   70   75

 Thr Pro Gly Thr Gln Thr His Pro Leu Thr Leu Gly Gly Leu Asn
                  80   85   90

 Val Gln Gln Gln Leu His Pro His Val Leu Pro Ile Phe Val Thr
                  95   100   105

 Gln Leu Gly Ala Gln Gly Thr Ile Leu Ser Ser Glu Glu Leu Pro
                  110   115   120

 Gln Ile Phe Thr Ser Leu Ile Ile His Ser Leu Phe Pro Gly Gly
                  125   130   135

 Ile Leu Pro Thr Ser Gln Ala Gly Ala Asn Pro Asp Val Gln Asp
                  140   145   150

 Gly Ser Leu Pro Ala Gly Gly Ala Gly Val Asn Pro Ala Thr Gln
                  155   160   165

 Gly Thr Pro Ala Gly Arg Leu Pro Thr Pro Ser Gly Thr Asp Asp
                  170   175   180

 Asp Phe Ala Val Thr Thr Pro Ala Gly Ile Gln Arg Ser Thr His
                  185   190   195

 Ala Ile Glu Glu Ala Thr Thr Glu Ser Ala Asn Gly Ile Gln

136

<210> 97
<211> 2848
<212> DNA
<213> Homo Sapien

<400> 97

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tggagaagga gctctcttct tgcttggcag ctggaccaag ggagccagtc 100

ttgggcgctg gagggcctgt cctgaccatg gtccctgcct ggctgtggct 150

gctttgtgtc tccgtccccc aggctctccc caaggcccag cctgcagagc 200

tgtctgtgga agttccagaa aactatggtg gaaatttccc tttatacctg 250

accaagttgc cgctgccccg tgaggggct gaaggccaga tcgtgctgtc 300

aggggactca ggcaaggcaa ctgagggccc atttgctatg gatccagatt 350

ctggcttcct gctggtgacc agggccctgg accgagagga gcaggcagag 400

taccagctac aggtcaccct ggagatgcag gatggacatg tcttgtgggg 450

tccacagcct gtgcttgtgc acgtgaagga tgagaatgac caggtgcccc 500

atttctctca agccatctac agagctcggc tgagccgggg taccaggcct 550

ggcatcccct tcctcttcct tgaggcttca gaccgggatg agccaggcac 600

agccaactcg gatcttcgat tccacatcct gagccaggct ccagcccagc 650

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agccccaagg ggagcaccag ccttgaccac gccctggaga ggacctacca 750

gctgttggta caggtcaagg acatgggtga ccaggcctca ggccaccagg 800

ccactgccac cgtggaagtc tccatcatag agagcacctg ggtgtcccta 850

gagcctatcc acctggcaga gaatctcaaa gtcctatacc cgcaccacat 900

ggcccaggta cactggagtg ggggtgatgt gcactatcac ctggagagcc 950

atccccggg accctttgaa gtgaatgcag agggaaacct ctacgtgacc 1000

agagagctgg acagagaagc cċaggctgag tacctgctcc aggtgcgggc 1050

tcagaattcc catggcgagg actatgcggc ccctctggag ctgcacgtgc 1100

tggtgatgga tgagaatgac aacgtgccta tctgccctcc ccgtgacccc 1150

acagtcagca tccctgagct cagtccacca ggtactgaag tgactagact 1200

gtcagcagag gatgcagatg cccccggctc ccccaattcc cacgttgtgt 1250
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```
atcagctcct gagccctgag cctgaggatg gggtagaggg gagagccttc 1300

caggtggacc ccacttcagg cagtgtgacg ctgggggtgc tcccactccg 1350

agcaggccag aacatcctgc ttctggtgct ggccatggac ctggcaggcg 1400

cagagggtgg cttcagcagc acgtgtgaag tcgaagtcgc agtcacagat 1450

atcaatgatc acgccctga gttcatcact tcccagattg ggcctataag 1500

cctccctgag gatgtggagc ccgggactct ggtggccatg ctaacagcca 1550

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atcagccgaa ccctcaggtt ctccctagtc aatgactcag agggctggct 1950

ctgcattgag aaattctccg gggaggtgca caccgcccag tccctgcagg 2000

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aaggacccgg atcaaccagc agacagcgtg cccctgaagg cgactgtctg 2550

aatggcccag gcagctctag ctgggagctt ggcctctggc tccatctgag 2600

tcccctggga gagagcccag cacccaagat ccagcagggg acaggacaga 2650
```

138

gtagaagccc ctccatctgc cctggggtgg aggcaccatc accatcacca 2700

ggcatgtctg cagagcctgg acaccaactt tatggactgc ccatgggagt 2750

gctccaaatg tcagggtgtt tgcccaataa taaagcccca gagaactggg 2800

ctgggcccta tgggaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaag 2848

<210> 98
<211> 807
<212> PRT
<213> Homo Sapien

<400> 98

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Met Val Pro Ala Trp Leu Trp Leu Leu Cys Val Ser Val Pro Gln
  1               5                  10                  15

Ala Leu Pro Lys Ala Gln Pro Ala Glu Leu Ser Val Glu Val Pro
             20                  25                  30

Glu Asn Tyr Gly Gly Asn Phe Pro Leu Tyr Leu Thr Lys Leu Pro
                 35                  40                  45

Leu Pro Arg Glu Gly Ala Glu Gly Gln Ile Val Leu Ser Gly Asp
                 50                  55                  60

Ser Gly Lys Ala Thr Glu Gly Pro Phe Ala Met Asp Pro Asp Ser
                 65                  70                  75

Gly Phe Leu Leu Val Thr Arg Ala Leu Asp Arg Glu Glu Gln Ala
                 80                  85                  90

Glu Tyr Gln Leu Gln Val Thr Leu Glu Met Gln Asp Gly His Val
                 95                 100                 105

Leu Trp Gly Pro Gln Pro Val Leu Val His Val Lys Asp Glu Asn
                110                 115                 120

Asp Gln Val Pro His Phe Ser Gln Ala Ile Tyr Arg Ala Arg Leu
                125                 130                 135

Ser Arg Gly Thr Arg Pro Gly Ile Pro Phe Leu Phe Leu Glu Ala
                140                 145                 150

Ser Asp Arg Asp Glu Pro Gly Thr Ala Asn Ser Asp Leu Arg Phe
                155                 160                 165

His Ile Leu Ser Gln Ala Pro Ala Gln Pro Ser Pro Asp Met Phe
                170                 175                 180

Gln Leu Glu Pro Arg Leu Gly Ala Leu Ala Leu Ser Pro Lys Gly
                185                 190                 195

Ser Thr Ser Leu Asp His Ala Leu Glu Arg Thr Tyr Gln Leu Leu
                200                 205                 210

Val Gln Val Lys Asp Met Gly Asp Gln Ala Ser Gly His Gln Ala
```

139

```
                215                     220                     225

Thr Ala Thr Val Glu Val Ser Ile Ile Glu Ser Thr Trp Val Ser
                230                     235                     240

Leu Glu Pro Ile His Leu Ala Glu Asn Leu Lys Val Leu Tyr Pro
                245                     250                     255

His His Met Ala Gln Val His Trp Ser Gly Gly Asp Val His Tyr
                260                     265                     270

His Leu Glu Ser His Pro Pro Gly Pro Phe Glu Val Asn Ala Glu
                275                     280                     285

Gly Asn Leu Tyr Val Thr Arg Glu Leu Asp Arg Glu Ala Gln Ala
                290                     295                     300

Glu Tyr Leu Leu Gln Val Arg Ala Gln Asn Ser His Gly Glu Asp
                305                     310                     315

Tyr Ala Ala Pro Leu Glu Leu His Val Leu Val Met Asp Glu Asn
                320                     325                     330

Asp Asn Val Pro Ile Cys Pro Pro Arg Asp Pro Thr Val Ser Ile
                335                     340                     345

Pro Glu Leu Ser Pro Pro Gly Thr Glu Val Thr Arg Leu Ser Ala
                350                     355                     360

Glu Asp Ala Asp Ala Pro Gly Ser Pro Asn Ser His Val Val Tyr
                365                     370                     375

Gln Leu Leu Ser Pro Glu Pro Glu Asp Gly Val Glu Gly Arg Ala
                380                     385                     390

Phe Gln Val Asp Pro Thr Ser Gly Ser Val Thr Leu Gly Val Leu
                395                     400                     405

Pro Leu Arg Ala Gly Gln Asn Ile Leu Leu Leu Val Leu Ala Met
                410                     415                     420

Asp Leu Ala Gly Ala Glu Gly Gly Phe Ser Ser Thr Cys Glu Val
                425                     430                     435

Glu Val Ala Val Thr Asp Ile Asn Asp His Ala Pro Glu Phe Ile
                440                     445                     450

Thr Ser Gln Ile Gly Pro Ile Ser Leu Pro Glu Asp Val Glu Pro
                455                     460                     465

Gly Thr Leu Val Ala Met Leu Thr Ala Ile Asp Ala Asp Leu Glu
                470                     475                     480

Pro Ala Phe Arg Leu Met Asp Phe Ala Ile Glu Arg Gly Asp Thr
                485                     490                     495

Glu Gly Thr Phe Gly Leu Asp Trp Glu Pro Asp Ser Gly His Val
```

```
                    500                     505                     510

Arg Leu Arg Leu Cys Lys Asn Leu Ser Tyr Glu Ala Ala Pro Ser
                    515                     520                     525

His Glu Val Val Val Val Val Gln Ser Val Ala Lys Leu Val Gly
                    530                     535                     540

Pro Gly Pro Gly Pro Gly Ala Thr Ala Thr Val Thr Val Leu Val
                    545                     550                     555

Glu Arg Val Met Pro Pro Pro Lys Leu Asp Gln Glu Ser Tyr Glu
                    560                     565                     570

Ala Ser Val Pro Ile Ser Ala Pro Ala Gly Ser Phe Leu Leu Thr
                    575                     580                     585

Ile Gln Pro Ser Asp Pro Ile Ser Arg Thr Leu Arg Phe Ser Leu
                    590                     595                     600

Val Asn Asp Ser Glu Gly Trp Leu Cys Ile Glu Lys Phe Ser Gly
                    605                     610                     615

Glu Val His Thr Ala Gln Ser Leu Gln Gly Ala Gln Pro Gly Asp
                    620                     625                     630

Thr Tyr Thr Val Leu Val Glu Ala Gln Asp Thr Ala Leu Thr Leu
                    635                     640                     645

Ala Pro Val Pro Ser Gln Tyr Leu Cys Thr Pro Arg Gln Asp His
                    650                     655                     660

Gly Leu Ile Val Ser Gly Pro Ser Lys Asp Pro Asp Leu Ala Ser
                    665                     670                     675

Gly His Gly Pro Tyr Ser Phe Thr Leu Gly Pro Asn Pro Thr Val
                    680                     685                     690

Gln Arg Asp Trp Arg Leu Gln Thr Leu Asn Gly Ser His Ala Tyr
                    695                     700                     705

Leu Thr Leu Ala Leu His Trp Val Glu Pro Arg Glu His Ile Ile
                    710                     715                     720

Pro Val Val Val Ser His Asn Ala Gln Met Trp Gln Leu Leu Val
                    725                     730                     735

Arg Val Ile Val Cys Arg Cys Asn Val Glu Gly Gln Cys Met Arg
                    740                     745                     750

Lys Val Gly Arg Met Lys Gly Met Pro Thr Lys Leu Ser Ala Val
                    755                     760                     765

Gly Ile Leu Val Gly Thr Leu Val Ala Ile Gly Ile Phe Leu Ile
                    770                     775                     780

Leu Ile Phe Thr His Trp Thr Met Ser Arg Lys Lys Asp Pro Asp


                             141
```

```
                    785                790                795

Gln Pro Ala Asp Ser Val Pro Leu Lys Ala Thr Val
                    800                805

<210> 99
<211> 2436
<212> DNA
<213> Homo Sapien

<400> 99
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 agctgcccac gcctgagtcc aagattcttc ccaggaacac aaacgtagga 100

 gacccacgct cctggaagca ccagccttta tctcttcacc ttcaagtccc 150

 ctttctcaag aatcctctgt tctttgccct ctaaagtctt ggtacatcta 200

 ggacccaggc atcttgcttt ccagccacaa agagacagat gaagatgcag 250

 aaaggaaatg ttctccttat gtttggtcta ctattgcatt tagaagctgc 300

 aacaaattcc aatgagacta gcacctctgc caacactgga tccagtgtga 350

 tctccagtgg agccagcaca gccaccaact ctgggtccag tgtgacctcc 400

 agtggggtca gcacagccac catctcaggg tccagcgtga cctccaatgg 450

 ggtcagcata gtcaccaact ctgagttcca tacaacctcc agtgggatca 500

 gcacagccac caactctgag ttcagcacag cgtccagtgg gatcagcata 550

 gccaccaact ctgagtccag cacaacctcc agtggggcca gcacagccac 600

 caactctgag tccagcacac cctccagtgg ggccagcaca gtcaccaact 650

 ctgggtccag tgtgacctcc agtggagcca gcactgccac caactctgag 700

 tccagcacag tgtccagtag ggccagcact gccaccaact ctgagtctag 750

 cacactctcc agtggggcca gcacagccac caactctgac tccagcacaa 800

 cctccagtgg ggctagcaca gccaccaact ctgagtccag cacaacctcc 850

 agtggggcca gcacagccac caactctgag tccagcacag tgtccagtag 900

 ggccagcact gccaccaact ctgagtccag cacaacctcc agtggggcca 950

 gcacagccac caactctgag tccagaacga cctccaatgg ggctggcaca 1000

 gccaccaact ctgagtccag cacgacctcc agtggggcca gcacagccac 1050

 caactctgac tccagcacag tgtccagtgg ggccagcact gccaccaact 1100

 ctgagtccag cacgacctcc agtggggcca gcacagccac caactctgag 1150
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                                    142

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tccagcacga cctccagtgg ggctagcaca gccaccaact ctgactccag 1200

cacaacctcc agtggggccg gcacagccac caactctgag tccagcacag 1250

tgtccagtgg gatcagcaca gtcaccaatt ctgagtccag cacaccctcc 1300

agtggggcca acacagccac caactctgag tccagtacga cctccagtgg 1350

ggccaacaca gccaccaact ctgagtccag cacagtgtcc agtggggcca 1400

gcactgccac caactctgag tccagcacaa cctccagtgg ggtcagcaca 1450

gccaccaact ctgagtccag cacaacctcc agtggggcta gcacagccac 1500

caactctgac tccagcacaa cctccagtga ggccagcaca gccaccaact 1550

ctgagtctag cacagtgtcc agtgggatca gcacagtcac caattctgag 1600

tccagcacaa cctccagtgg ggccaacaca gccaccaact ctgggtccag 1650

tgtgacctct gcaggctctg aacagcagc tctgactgga atgcacacaa 1700

cttcccatag tgcatctact gcagtgagtg aggcaaagcc tggtgggtcc 1750

ctggtgccgt gggaaatctt cctcatcacc ctggtctcgg ttgtggcggc 1800

cgtggggctc tttgctgggc tcttcttctg tgtgagaaac agcctgtccc 1850

tgagaaacac ctttaacaca gctgtctacc accctcatgg cctcaaccat 1900

ggccttggtc caggccctgg agggaatcat ggagcccccc acaggcccag 1950

gtggagtcct aactggttct ggaggagacc agtatcatcg atagccatgg 2000

agatgagcgg gaggaacagc gggccctgag cagccccgga agcaagtgcc 2050

gcattcttca ggaaggaaga gacctgggca cccaagacct ggtttccttt 2100

cattcatccc aggagacccc tcccagcttt gtttgagatc ctgaaaatct 2150

tgaagaaggt attcctcacc tttcttgcct ttaccagaca ctggaaagag 2200

aatactatat tgctcattta gctaagaaat aaatacatct catctaacac 2250

acacgacaaa gagaagctgt gcttgccccg gggtgggtat ctagctctga 2300

gatgaactca gttataggag aaaacctcca tgctggactc catctggcat 2350

tcaaaatctc cacagtaaaa tccaaagacc tcaaaaaaaa aaaaaaaaaa 2400

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa 2436
```

<210> 100
<211> 596
<212> PRT
<213> Homo Sapien

143

<400> 100

```
Met Lys Met Gln Lys Gly Asn Val Leu Leu Met Phe Gly Leu Leu
 1               5                  10                  15

Leu His Leu Glu Ala Ala Thr Asn Ser Asn Glu Thr Ser Thr Ser
                20                  25                  30

Ala Asn Thr Gly Ser Ser Val Ile Ser Ser Gly Ala Ser Thr Ala
                35                  40                  45
Thr Asn Ser Gly Ser Ser Val Thr Ser Ser Gly Val Ser Thr Ala
                50                  55                  60

Thr Ile Ser Gly Ser Ser Val Thr Ser Asn Gly Val Ser Ile Val
                65                  70                  75

Thr Asn Ser Glu Phe His Thr Thr Ser Ser Gly Ile Ser Thr Ala
                80                  85                  90

Thr Asn Ser Glu Phe Ser Thr Ala Ser Ser Gly Ile Ser Ile Ala
                95                  100                 105

Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Ala Ser Thr Ala
                110                 115                 120

Thr Asn Ser Glu Ser Ser Thr Pro Ser Ser Gly Ala Ser Thr Val
                125                 130                 135

Thr Asn Ser Gly Ser Ser Val Thr Ser Ser Gly Ala Ser Thr Ala
                140                 145                 150

Thr Asn Ser Glu Ser Ser Thr Val Ser Ser Arg Ala Ser Thr Ala
                155                 160                 165

Thr Asn Ser Glu Ser Ser Thr Leu Ser Ser Gly Ala Ser Thr Ala
                170                 175                 180

Thr Asn Ser Asp Ser Ser Thr Thr Ser Ser Gly Ala Ser Thr Ala
                185                 190                 195

Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Ala Ser Thr Ala
                200                 205                 210

Thr Asn Ser Glu Ser Ser Thr Val Ser Ser Arg Ala Ser Thr Ala
                215                 220                 225

Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Ala Ser Thr Ala
                230                 235                 240

Thr Asn Ser Glu Ser Arg Thr Thr Ser Asn Gly Ala Gly Thr Ala
                245                 250                 255

Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Ala Ser Thr Ala
                260                 265                 270

Thr Asn Ser Asp Ser Ser Thr Val Ser Ser Gly Ala Ser Thr Ala
                275                 280                 285
```

Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Ala Ser Thr Ala
            290   295   300

Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Ala Ser Thr Ala
            305   310   315

Thr Asn Ser Asp Ser Ser Thr Thr Ser Ser Gly Ala Gly Thr Ala
            320   325   330

Thr Asn Ser Glu Ser Ser Thr Val Ser Ser Gly Ile Ser Thr Val
            335   340   345

Thr Asn Ser Glu Ser Ser Thr Pro Ser Ser Gly Ala Asn Thr Ala
            350   355   360

Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Ala Asn Thr Ala
            365   370   375

Thr Asn Ser Glu Ser Ser Thr Val Ser Ser Gly Ala Ser Thr Ala
            380   385   390

Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Val Ser Thr Ala
            395   400   405

Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Ala Ser Thr Ala
            410   415   420

Thr Asn Ser Asp Ser Ser Thr Thr Ser Ser Glu Ala Ser Thr Ala
            425   430   435

Thr Asn Ser Glu Ser Ser Thr Val Ser Ser Gly Ile Ser Thr Val
            440   445   450

Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Ala Asn Thr Ala
            455   460   465

Thr Asn Ser Gly Ser Ser Val Thr Ser Ala Gly Ser Gly Thr Ala
            470   475   480

Ala Leu Thr Gly Met His Thr Thr Ser His Ser Ala Ser Thr Ala
            485   490   495

Val Ser Glu Ala Lys Pro Gly Gly Ser Leu Val Pro Trp Glu Ile
            500   505   510

Phe Leu Ile Thr Leu Val Ser Val Val Ala Ala Val Gly Leu Phe
            515   520   525

Ala Gly Leu Phe Phe Cys Val Arg Asn Ser Leu Ser Leu Arg Asn
            530   535   540

Thr Phe Asn Thr Ala Val Tyr His Pro His Gly Leu Asn His Gly
            545   550   555

Leu Gly Pro Gly Pro Gly Gly Asn His Gly Ala Pro His Arg Pro
            560   565   570

145

```
Arg Trp Ser Pro Asn Trp Phe Trp Arg Arg Pro Val Ser Ser Ile
              575                 580                 585

Ala Met Glu Met Ser Gly Arg Asn Ser Gly Pro
              590                 595


<210> 101
<211> 1728
<212> DNA
<213> Homo Sapien

<400> 101
 ggccggacgc ctccgcgtta cgggatgaat taacggcggg ttccgcacgg 50

 aggttgtgac ccctacggag ccccagcttg cccacgcacc ccactcggcg 100
 tcgcgcggcg tgccctgctt gtcacaggtg ggaggctgga actatcaggc 150

 tgaaaaacag agtgggtact ctcttctggg aagctggcaa caaatggatg 200

 atgtgatata tgcattccag gggaagggaa attgtggtgc ttctgaaccc 250

 atggtcaatt aacgaggcag tttctagcta ctgcacgtac ttcataaagc 300

 aggactctaa aagctttgga atcatggtgt catggaaagg gatttacttt 350

 atactgactc tgttttgggg aagctttttt ggaagcattt tcatgctgag 400

 tcccttttta cctttgatgt ttgtaaaccc atcttggtat cgctggatca 450

 acaaccgcct tgtggcaaca tggctcaccc tacctgtggc attattggag 500

 accatgtttg gtgtaaaagt gattataact ggggatgcat ttgttcctgg 550

 agaaagaagt gtcattatca tgaaccatcg acaagaatg gactggatgt 600

 tcctgtggaa ttgcctgatg cgatatagct acctcagatt ggagaaaatt 650

 tgcctcaaag cgagtctcaa aggtgttcct ggatttggtt gggccatgca 700

 ggctgctgcc tatatcttca ttcataggaa atggaaggat gacaagagcc 750

 atttcgaaga catgattgat tactttgtg atattcacga accacttcaa 800

 ctcctcatat tcccagaagg gactgatctc acagaaaaca gcaagtctcg 850

 aagtaatgca tttgctgaaa aaaatggact tcagaaatat gaatatgttt 900

 tacatccaag aactacaggc tttacttttg tggtagaccg tctaagagaa 950

 ggtaagaacc ttgatgctgt ccatgatatc actgtggcgt atcctcacaa 1000

 cattcctcaa tcagagaagc acctcctcca aggagacttt cccagggaaa 1050

 tccactttca cgtccaccgg tatccaatag acaccctccc cacatccaag 1100

 gaggaccttc aactctggtg ccacaaacgg tgggaagaga aagaagagag 1150
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146

```
gctgcgttcc ttctatcaag gggagaagaa tttttatttt accggacaga 1200

gtgtcattcc accttgcaag tctgaactca gggtccttgt ggtcaaattg 1250

ctctctatac tgtattggac cctgttcagc cctgcaatgt gcctactcat 1300

atatttgtac agtcttgtta agtggtattt tataatcacc attgtaatct 1350

ttgtgctgca agagagaata tttggtggac tggagatcat agaacttgca 1400

tgttaccgac ttttacacaa acagccacat ttaaattcaa agaaaaatga 1450

gtaagattat aaggtttgcc atgtgaaaac ctagagcata ttttggaaat 1500

gttctaaacc tttctaagct cagatgcatt tttgcatgac tatgtcgaat 1550

atttcttact gccatcatta tttgttaaag atattttgca cttaattttg 1600

tgggaaaaat attgctacaa ttttttttaa tctctgaatg taatttcgat 1650

actgtgtaca tagcagggag tgatcggggt gaaataactt gggccagaat 1700

attattaaac aatcatcagg cttttaaa 1728
```

<210> 102
<211> 414
<212> PRT
<213> Homo Sapien

<400> 102

```
 Met His Ser Arg Gly Arg Glu Ile Val Val Leu Leu Asn Pro Trp
  1               5                  10                  15

 Ser Ile Asn Glu Ala Val Ser Ser Tyr Cys Thr Tyr Phe Ile Lys
                 20                  25                  30

 Gln Asp Ser Lys Ser Phe Gly Ile Met Val Ser Trp Lys Gly Ile
                 35                  40                  45

 Tyr Phe Ile Leu Thr Leu Phe Trp Gly Ser Phe Phe Gly Ser Ile
                 50                  55                  60

 Phe Met Leu Ser Pro Phe Leu Pro Leu Met Phe Val Asn Pro Ser
                 65                  70                  75

 Trp Tyr Arg Trp Ile Asn Asn Arg Leu Val Ala Thr Trp Leu Thr
                 80                  85                  90

 Leu Pro Val Ala Leu Leu Glu Thr Met Phe Gly Val Lys Val Ile
                 95                 100                 105

 Ile Thr Gly Asp Ala Phe Val Pro Gly Glu Arg Ser Val Ile Ile
                110                 115                 120

 Met Asn His Arg Thr Arg Met Asp Trp Met Phe Leu Trp Asn Cys
                125                 130                 135
```

147

```
Leu Met Arg Tyr Ser Tyr Leu Arg Leu Glu Lys Ile Cys Leu Lys
            140                 145             150

Ala Ser Leu Lys Gly Val Pro Gly Phe Gly Trp Ala Met Gln Ala
            155                 160             165

Ala Ala Tyr Ile Phe Ile His Arg Lys Trp Lys Asp Asp Lys Ser
            170                 175             180

His Phe Glu Asp Met Ile Asp Tyr Phe Cys Asp Ile His Glu Pro
            185                 190             195

Leu Gln Leu Leu Ile Phe Pro Glu Gly Thr Asp Leu Thr Glu Asn
            200                 205             210

Ser Lys Ser Arg Ser Asn Ala Phe Ala Glu Lys Asn Gly Leu Gln
            215                 220             225

Lys Tyr Glu Tyr Val Leu His Pro Arg Thr Thr Gly Phe Thr Phe
            230                 235             240

Val Val Asp Arg Leu Arg Glu Gly Lys Asn Leu Asp Ala Val His
            245                 250             255

Asp Ile Thr Val Ala Tyr Pro His Asn Ile Pro Gln Ser Glu Lys
            260                 265             270

His Leu Leu Gln Gly Asp Phe Pro Arg Glu Ile His Phe His Val
            275                 280             285

His Arg Tyr Pro Ile Asp Thr Leu Pro Thr Ser Lys Glu Asp Leu
            290                 295             300

Gln Leu Trp Cys His Lys Arg Trp Glu Glu Lys Glu Glu Arg Leu
            305                 310             315

Arg Ser Phe Tyr Gln Gly Glu Lys Asn Phe Tyr Phe Thr Gly Gln
            320                 325             330

Ser Val Ile Pro Pro Cys Lys Ser Glu Leu Arg Val Leu Val Val
            335                 340             345

Lys Leu Leu Ser Ile Leu Tyr Trp Thr Leu Phe Ser Pro Ala Met
            350                 355             360

Cys Leu Leu Ile Tyr Leu Tyr Ser Leu Val Lys Trp Tyr Phe Ile
            365                 370             375

Ile Thr Ile Val Ile Phe Val Leu Gln Glu Arg Ile Phe Gly Gly
            380                 385             390

Leu Glu Ile Ile Glu Leu Ala Cys Tyr Arg Leu Leu His Lys Gln
            395                 400             405

Pro His Leu Asn Ser Lys Lys Asn Glu
            410
```

<210> 103
<211> 2403
<212> DNA
<213> Homo Sapien

<400> 103
cggctcgagc ggctcgagtg aagagcctct ccacggctcc tgcgcctgag 50

acagctggcc tgacctccaa atcatccatc cacccctgct gtcatctgtt 100

ttcatagtgt gagatcaacc cacaggaata tccatggctt ttgtgctcat 150

tttggttctc agtttctacg agctggtgtc aggacagtgg caagtcactg 200

gaccgggcaa gtttgtccag gccttggtgg gggaggacgc cgtgttctcc 250

tgctccctct ttcctgagac cagtgcagag gctatggaag tgcggttctt 300

caggaatcag ttccatgctg tggtccacct ctacagagat ggggaagact 350

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aggatttgtc ttcagactcc agagcaaatg cagatgggta cagcctgtat 700

gatgtggaga tctccattat agtccaggaa aatgctggga gcatattgtg 750

ttccatccac cttgctgagc agagtcatga ggtggaatcc aaggtattga 800

taggagagac gtttttccag ccctcacctt ggcgcctggc ttctatttta 850

ctcgggttac tctgtggtgc cctgtgtggt gttgtcatgg ggatgataat 900

tgttttcttc aaatccaaag ggaaaatcca ggcggaactg gactggagaa 950

gaaagcacgg acaggcagaa ttgagagacg cccggaaaca cgcagtggag 1000

gtgactctgg atccagagac ggctcacccg aagctctgcg tttctgatct 1050

gaaaactgta acccatagaa aàgctcccca ggaggtgcct cactctgaga 1100

agagatttac aaggaagagt gtggtggctt ctcagggttt ccaagcaggg 1150

agacattact gggaggtgga cgtgggacaa aatgtagggt ggtatgtggg 1200

agtgtgtcgg gatgacgtag acaggggggaa gaacaatgtg actttgtctc 1250

ccaacaatgg gtattgggtc ctcagactga caacagaaca tttgtatttc 1300

149

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acattcaatc cccattttat cagcctcccc cccagcaccc ctcctacacg 1350

agtaggggtc ttcctggact atgagggtgg gaccatctcc ttcttcaata 1400

caaatgacca gtcccttatt tataccctgc tgacatgtca gtttgaaggc 1450

ttgttgagac cctatatcca gcatgcgatg tatgacgagg aaaaggggac 1500

tcccatattc atatgtccag tgtcctgggg atgagacaga gaagaccctg 1550

cttaaagggc cccacaccac agacccagac acagccaagg gagagtgctc 1600

ccgacaggtg gccccagctt cctctccgga gcctgcgcac agagagtcac 1650

gccccccact ctcctttagg gagctgaggt tcttctgccc tgagccctgc 1700

agcagcggca gtcacagctt ccagatgagg ggggattggc ctgaccctgt 1750

gggagtcaga agccatggct gccctgaagt ggggacggaa tagactcaca 1800

ttaggtttag tttgtgaaaa ctccatccag ctaagcgatc ttgaacaagt 1850

cacaacctcc caggctcctc atttgctagt cacggacagt gattcctgcc 1900

tcacaggtga agattaaaga gacaacgaat gtgaatcatg cttgcaggtt 1950

tgagggcaca gtgtttgcta atgatgtgtt tttatattat acattttccc 2000

accataaact ctgtttgctt attccacatt aatttacttt tctctatacc 2050

aaatcaccca tggaatagtt attgaacacc tgctttgtga ggctcaaaga 2100

ataaagagga ggtaggattt ttcactgatt ctataagccc agcattacct 2150

gataccaaaa ccaggcaaag aaaacagaag aagaggaagg aaaactacag 2200

gtccatatcc ctcattaaca cagacacaaa aattctaaat aaaattttaa 2250

caaattaaac taaacaatat atttaaagat gatatataac tactcagtgt 2300

ggtttgtccc acaaatgcag agttggttta atatttaaat atcaaccagt 2350

gtaattcagc acattaataa agtaaaaaag aaaaccataa aaaaaaaaaa 2400

aaa 2403

<210> 104
<211> 466
<212> PRT
<213> Homo Sapien

<400> 104
 Met Ala Phe Val Leu Ile Leu Val Leu Ser Phe Tyr Glu Leu Val
   1               5                  10                  15

 Ser Gly Gln Trp Gln Val Thr Gly Pro Gly Lys Phe Val Gln Ala
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150

```
                    20                    25                    30

Leu Val Gly Glu Asp Ala Val Phe Ser Cys Ser Leu Phe Pro Glu
                35                    40                    45

Thr Ser Ala Glu Ala Met Glu Val Arg Phe Phe Arg Asn Gln Phe
                50                    55                    60

His Ala Val Val His Leu Tyr Arg Asp Gly Glu Asp Trp Glu Ser
                65                    70                    75

Lys Gln Met Pro Gln Tyr Arg Gly Arg Thr Glu Phe Val Lys Asp
                80                    85                    90

Ser Ile Ala Gly Gly Arg Val Ser Leu Arg Leu Lys Asn Ile Thr
                95                    100                   105

Pro Ser Asp Ile Gly Leu Tyr Gly Cys Trp Phe Ser Ser Gln Ile
                110                   115                   120

Tyr Asp Glu Glu Ala Thr Trp Glu Leu Arg Val Ala Ala Leu Gly
                125                   130                   135

Ser Leu Pro Leu Ile Ser Ile Val Gly Tyr Val Asp Gly Gly Ile
                140                   145                   150

Gln Leu Leu Cys Leu Ser Ser Gly Trp Phe Pro Gln Pro Thr Ala
                155                   160                   165

Lys Trp Lys Gly Pro Gln Gly Gln Asp Leu Ser Ser Asp Ser Arg
                170                   175                   180

Ala Asn Ala Asp Gly Tyr Ser Leu Tyr Asp Val Glu Ile Ser Ile
                185                   190                   195

Ile Val Gln Glu Asn Ala Gly Ser Ile Leu Cys Ser Ile His Leu
                200                   205                   210

Ala Glu Gln Ser His Glu Val Glu Ser Lys Val Leu Ile Gly Glu
                215                   220                   225

Thr Phe Phe Gln Pro Ser Pro Trp Arg Leu Ala Ser Ile Leu Leu
                230                   235                   240

Gly Leu Leu Cys Gly Ala Leu Cys Gly Val Val Met Gly Met Ile
                245                   250                   255

Ile Val Phe Phe Lys Ser Lys Gly Lys Ile Gln Ala Glu Leu Asp
                260                   265                   270

Trp Arg Arg Lys His Gly Gln Ala Glu Leu Arg Asp Ala Arg Lys
                275                   280                   285

His Ala Val Glu Val Thr Leu Asp Pro Glu Thr Ala His Pro Lys
                290                   295                   300

Leu Cys Val Ser Asp Leu Lys Thr Val Thr His Arg Lys Ala Pro
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151

Gln Glu Val Pro His Ser Glu Lys Arg Phe Thr Arg Lys Ser Val
                320   325   330

Val Ala Ser Gln Gly Phe Gln Ala Gly Arg His Tyr Trp Glu Val
                335   340   345

Asp Val Gly Gln Asn Val Gly Trp Tyr Val Gly Val Cys Arg Asp
                350   355   360

Asp Val Asp Arg Gly Lys Asn Asn Val Thr Leu Ser Pro Asn Asn
                365   370   375

Gly Tyr Trp Val Leu Arg Leu Thr Thr Glu His Leu Tyr Phe Thr
                380   385   390

Phe Asn Pro His Phe Ile Ser Leu Pro Pro Ser Thr Pro Pro Thr
                395   400   405

Arg Val Gly Val Phe Leu Asp Tyr Glu Gly Gly Thr Ile Ser Phe
                410   415   420

Phe Asn Thr Asn Asp Gln Ser Leu Ile Tyr Thr Leu Leu Thr Cys
                425   430   435

Gln Phe Glu Gly Leu Leu Arg Pro Tyr Ile Gln His Ala Met Tyr
                440   445   450

Asp Glu Glu Lys Gly Thr Pro Ile Phe Ile Cys Pro Val Ser Trp
                455   460   465

Gly

<210> 105
<211> 2103
<212> DNA
<213> Homo Sapien

<400> 105
 ccttcacagg actcttcatt gctggttggc aatgatgtat cggccagatg 50

 tggtgagggc taggaaaaga gtttgttggg aaccctgggt tatcggcctc 100

 gtcatcttca tatccctgat tgtcctggca gtgtgcattg gactcactgt 150

 tcattatgtg agatataatc aaaagaagac ctacaattac tatagcacat 200

 tgtcatttac aactgacaaa ctatatgctg agtttggcag agaggcttct 250

 aacaattta cagaaatgag ccagagactt gaatcaatgg tgaaaaatgc 300

 attttataaa tctccattaa gggaagaatt tgtcaagtct caggttatca 350

 agttcagtca acagaagcat ggagtgttgg ctcatatgct gttgatttgt 400

 agatttcact ctactgagga tcctgaaact gtagataaaa ttgttcaact 450

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tgttttacat gaaaagctgc aagatgctgt aggaccccct aaagtagatc 500

ctcactcagt taaaattaaa aaaatcaaca agacagaaac agacagctat 550

ctaaaccatt gctgcggaac acgaagaagt aaaactctag gtcagagtct 600

caggatcgtt ggtgggacag aagtagaaga gggtgaatgg ccctggcagg 650

ctagcctgca gtgggatggg agtcatcgct gtggagcaac cttaattaat 700

gccacatggc ttgtgagtgc tgctcactgt tttacaacat ataagaaccc 750

tgccagatgg actgcttcct ttggagtaac aataaaacct tcgaaaatga 800

aacggggtct ccggagaata attgtccatg aaaaatacaa acacccatca 850

catgactatg atatttctct tgcagagctt tctagccctg ttccctacac 900

aaatgcagta catagagttt gtctccctga tgcatcctat gagtttcaac 950

caggtgatgt gatgtttgtg acaggatttg gagcactgaa aaatgatggt 1000

tacagtcaaa atcatcttcg acaagcacag gtgactctca tagacgctac 1050

aacttgcaat gaacctcaag cttacaatga cgccataact cctagaatgt 1100

tatgtgctgg ctccttagaa ggaaaaacag atgcatgcca gggtgactct 1150

ggaggaccac tggttagttc agatgctaga gatatctggt accttgctgg 1200

aatagtgagc tggggagatg aatgtgcgaa acccaacaag cctggtgttt 1250

atactagagt tacggccttg cgggactgga ttacttcaaa aactggtatc 1300

taagagacaa aagcctcatg gaacagataa cattttttt tgttttttgg 1350
gtgtggaggc catttttaga gatacagaat tggagaagac ttgcaaaaca 1400

gctagatttg actgatctca ataaactgtt tgcttgatgc atgtattttc 1450

ttcccagctc tgttccgcac gtaagcatcc tgcttctgcc agatcaactc 1500

tgtcatctgt gagcaatagt tgaaacttta tgtacataga gaaatagata 1550

atacaatatt acattacagc ctgtattcat ttgttctcta gaagttttgt 1600

cagaattttg acttgttgac ataaatttgt aatgcatata tacaatttga 1650

agcactcctt ttcttcagtt cctcagctcc tctcatttca gcaaatatcc 1700

attttcaagg tgcagaacaa ggagtgaaag aaaatataag aagaaaaaaa 1750

tcccctacat tttattggca cagaaaagta ttaggtgttt ttcttagtgg 1800

aatattagaa atgatcatat tcattatgaa aggtcaagca aagacagcag 1850

aataccaatc acttcatcat ttaggaagta tgggaactaa gttaaggaag 1900
```

153

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tccagaaaga agccaagata tatccttatt ttcatttcca aacaactact 1950

atgataaatg tgaagaagat tctgtttttt tgtgacctat aataattata 2000

caaacttcat gcaatgtact tgttctaagc aaattaaagc aaatatttat 2050

ttaacattgt tactgaggat gtcaacatat aacaataaaa tataaatcac 2100

cca 2103
```

<210> 106
<211> 423
<212> PRT
<213> Homo Sapien

<400> 106

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Met Met Tyr Arg Pro Asp Val Val Arg Ala Arg Lys Arg Val Cys
 1               5                   10                  15

Trp Glu Pro Trp Val Ile Gly Leu Val Ile Phe Ile Ser Leu Ile
                20                  25                  30

Val Leu Ala Val Cys Ile Gly Leu Thr Val His Tyr Val Arg Tyr
                35                  40                  45

Asn Gln Lys Lys Thr Tyr Asn Tyr Tyr Ser Thr Leu Ser Phe Thr
                50                  55                  60

Thr Asp Lys Leu Tyr Ala Glu Phe Gly Arg Glu Ala Ser Asn Asn
                65                  70                  75

Phe Thr Glu Met Ser Gln Arg Leu Glu Ser Met Val Lys Asn Ala
                80                  85                  90

Phe Tyr Lys Ser Pro Leu Arg Glu Glu Phe Val Lys Ser Gln Val
                95                  100                 105

Ile Lys Phe Ser Gln Gln Lys His Gly Val Leu Ala His Met Leu
                110                 115                 120

Leu Ile Cys Arg Phe His Ser Thr Glu Asp Pro Glu Thr Val Asp
                125                 130                 135

Lys Ile Val Gln Leu Val Leu His Glu Lys Leu Gln Asp Ala Val
                140                 145                 150

Gly Pro Pro Lys Val Asp Pro His Ser Val Lys Ile Lys Lys Ile
                155                 160                 165

Asn Lys Thr Glu Thr Asp Ser Tyr Leu Asn His Cys Cys Gly Thr
                170                 175                 180

Arg Arg Ser Lys Thr Leu Gly Gln Ser Leu Arg Ile Val Gly Gly
                185                 190                 195

Thr Glu Val Glu Glu Gly Glu Trp Pro Trp Gln Ala Ser Leu Gln
```

154

Trp Asp Gly Ser His Arg Cys Gly Ala Thr Leu Ile Asn Ala Thr
                215   220   225

Trp Leu Val Ser Ala Ala His Cys Phe Thr Thr Tyr Lys Asn Pro
                230   235   240

Ala Arg Trp Thr Ala Ser Phe Gly Val Thr Ile Lys Pro Ser Lys
                245   250   255

Met Lys Arg Gly Leu Arg Arg Ile Ile Val His Glu Lys Tyr Lys
                260   265   270

His Pro Ser His Asp Tyr Asp Ile Ser Leu Ala Glu Leu Ser Ser
                275   280   285

Pro Val Pro Tyr Thr Asn Ala Val His Arg Val Cys Leu Pro Asp
                290   295   300

Ala Ser Tyr Glu Phe Gln Pro Gly Asp Val Met Phe Val Thr Gly
                305   310   315

Phe Gly Ala Leu Lys Asn Asp Gly Tyr Ser Gln Asn His Leu Arg
                320   325   330

Gln Ala Gln Val Thr Leu Ile Asp Ala Thr Thr Cys Asn Glu Pro
                335   340   345

Gln Ala Tyr Asn Asp Ala Ile Thr Pro Arg Met Leu Cys Ala Gly
                350   355   360

Ser Leu Glu Gly Lys Thr Asp Ala Cys Gln Gly Asp Ser Gly Gly
                365   370   375

Pro Leu Val Ser Ser Asp Ala Arg Asp Ile Trp Tyr Leu Ala Gly
                380   385   390

Ile Val Ser Trp Gly Asp Glu Cys Ala Lys Pro Asn Lys Pro Gly
                395   400   405

Val Tyr Thr Arg Val Thr Ala Leu Arg Asp Trp Ile Thr Ser Lys
                410   415   420

Thr Gly Ile

<210> 107
<211> 2397
<212> DNA
<213> Homo Sapien

<400> 107
 agagaaagaa gcgtctccag ctgaagccaa tgcagccctc cggctctccg 50

 cgaagaagtt ccctgccccg atgagccccc gccgtgcgtc cccgactatc 100

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cccaggcggg cgtggggcac cgggcccagc gccgacgatc gctgccgttt 150

tgcccttggg agtaggatgt ggtgaaagga tggggcttct cccttacggg 200

gctcacaatg gccagagaag attccgtgaa gtgtctgcgc tgcctgctct 250

acgccctcaa tctgctcttt tggttaatgt ccatcagtgt gttggcagtt 300

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aacgagggta gaggaagcag tcattttgac ttactttcct gtggttcatc 400

cggtcatgat tgctgtttgc tgtttcctta tcattgtggg gatgttagga 450

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tgcttggaat tttttcaga gagagtttaa gtgctgtgga gtagtatatt 700

tcactgactg gttggaaatg acagagatgg actggccccc agattcctgc 750

tgtgttagag aattcccagg atgttccaaa caggcccacc aggaagatct 800

cagtgacctt tatcaagagg gttgtgggaa gaaaatgtat tcctttttga 850

gaggaaccaa acaactgcag gtgctgaggt ttctgggaat ctccattggg 900

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agcctgtcaa gaatctttga acacacatcc atggcaaaca gctttaatac 1100

acactttgag atggaggagt tataaaaaga aatgtcacag aagaaaacca 1150

caaacttgtt ttattggact tgtgaatttt tgagtacata ctatgtgttt 1200

cagaaatatg tagaaataaa aatgttgcca taaaataaca cctaagcata 1250
tactattcta tgctttaaaa tgaggatgga aaagtttcat gtcataagtc 1300

accacctgga caataattga tgcccttaaa atgctgaaga cagatgtcat 1350

acccactgtg tagcctgtgt atgacttta ctgaacacag ttatgttttg 1400

aggcagcatg gtttgattag catttccgca tccatgcaaa cgagtcacat 1450

atggtgggac tggagccata gtaaaggttg atttacttct accaactagt 1500

atataaagta ctaattaaat gctaacatag gaagttagaa aatactaata 1550
```

156

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acttttatta ctcagcgatc tattcttctg atgctaaata aattatatat 1600

cagaaaactt tcaatattgg tgactaccta aatgtgattt ttgctggtta 1650

ctaaaatatt cttaccactt aaaagagcaa gctaacacat tgtcttaagc 1700

tgatcaggga ttttttgtat ataagtctgt gttaaatctg tataattcag 1750

tcgatttcag ttctgataat gttaagaata accattatga aaaggaaaat 1800

ttgtcctgta tagcatcatt atttttagcc tttcctgtta ataaagcttt 1850

actattctgt cctgggctta tattacacat ataactgtta tttaaatact 1900

taaccactaa ttttgaaaat taccagtgtg atacatagga atcattattc 1950

agaatgtagt ctggtcttta ggaagtatta ataagaaaat ttgcacataa 2000

cttagttgat tcagaaagga cttgtatgct gtttttctcc caaatgaaga 2050

ctctttttga cactaaacac tttttaaaaa gcttatcttt gccttctcca 2100

aacaagaagc aatagtctcc aagtcaatat aaattctaca gaaaatagtg 2150

ttctttttct ccagaaaaat gcttgtgaga atcattaaaa catgtgacaa 2200

tttagagatt ctttgtttta tttcactgat taatatactg tggcaaatta 2250

cacagattat taaattttt tacaagagta tagtatattt atttgaaatg 2300

ggaaaagtgc attttactgt attttgtgta ttttgtttat ttctcagaat 2350

atggaaagaa aattaaaatg tgtcaataaa tattttctag agagtaa 2397
```

<210> 108
<211> 305
<212> PRT
<213> Homo Sapien

<400> 108
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Met Ala Arg Glu Asp Ser Val Lys Cys Leu Arg Cys Leu Leu Tyr
 1               5                  10                  15

Ala Leu Asn Leu Leu Phe Trp Leu Met Ser Ile Ser Val Leu Ala
             20                  25                  30

Val Ser Ala Trp Met Arg Asp Tyr Leu Asn Asn Val Leu Thr Leu
             35              40                  45
Thr Ala Glu Thr Arg Val Glu Glu Ala Val Ile Leu Thr Tyr Phe
             50              55                  60

Pro Val Val His Pro Val Met Ile Ala Val Cys Cys Phe Leu Ile
             65              70                  75

Ile Val Gly Met Leu Gly Tyr Cys Gly Thr Val Lys Arg Asn Leu
             80              85                  90
```

157

```
Leu Leu Leu Ala Trp Tyr Phe Gly Ser Leu Leu Val Ile Phe Cys
                95                  100                 105

Val Glu Leu Ala Cys Gly Val Trp Thr Tyr Glu Gln Glu Leu Met
                110                 115                 120

Val Pro Val Gln Trp Ser Asp Met Val Thr Leu Lys Ala Arg Met
                125                 130                 135

Thr Asn Tyr Gly Leu Pro Arg Tyr Arg Trp Leu Thr His Ala Trp
                140                 145                 150

Asn Phe Phe Gln Arg Glu Phe Lys Cys Cys Gly Val Val Tyr Phe
                155          .      160                 165

Thr Asp Trp Leu Glu Met Thr Glu Met Asp Trp Pro Pro Asp Ser
                170                 175                 180

Cys Cys Val Arg Glu Phe Pro Gly Cys Ser Lys Gln Ala His Gln
                185                 190                 195

Glu Asp Leu Ser Asp Leu Tyr Gln Glu Gly Cys Gly Lys Lys Met
                200                 205                 210

Tyr Ser Phe Leu Arg Gly Thr Lys Gln Leu Gln Val Leu Arg Phe
                215                 220                 225

Leu Gly Ile Ser Ile Gly Val Thr Gln Ile Leu Ala Met Ile Leu
                230                 235                 240

Thr Ile Thr Leu Leu Trp Ala Leu Tyr Tyr Asp Arg Arg Glu Pro
                245                 250                 255

Gly Thr Asp Gln Met Met Ser Leu Lys Asn Asp Asn Ser Gln His
                260                 265                 270

Leu Ser Cys Pro Ser Val Glu Leu Leu Lys Pro Ser Leu Ser Arg
                275                 280                 285

Ile Phe Glu His Thr Ser Met Ala Asn Ser Phe Asn Thr His Phe
                290                 295                 300

Glu Met Glu Glu Leu
                305

<210> 109
<211> 2339
<212> DNA
<213> Homo Sapien

<400> 109
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 tctgataaag cccctaccag tgctgataaa gtctttctcg tgagagccta 100

 gaggccttaa aaaaaaaagt gcttgaaaga gaaggggaca aaggaacacc 150
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158

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agtattaaga ggattttcca gtgtttctgg cagttggtcc agaaggatgc 200

ctccattcct gcttctcacc tgcctcttca tcacaggcac ctccgtgtca 250

cccgtggccc tagatccttg ttctgcttac atcagcctga atgagccctg 300

gaggaacact gaccaccagt tggatgagtc tcaaggtcct cctctatgtg 350

acaaccatgt gaatggggag tggtaccact tcacgggcat ggcgggagat 400

gccatgccta ccttctgcat accagaaaac cactgtggaa cccacgcacc 450

tgtctggctc aatggcagcc acccctaga aggcgacggc attgtgcaac 500

gccaggcttg tgccagcttc aatgggaact gctgtctctg aacaccacg 550

gtggaagtca aggcttgccc tggaggctac tatgtgtatc gtctgaccaa 600

gcccagcgtc tgcttccacg tctactgtgg tcatttttat gacatctgcg 650

acgaggactg ccatggcagc tgctcagata ccagcgagtg cacatgcgct 700

ccaggaactg tgctaggccc tgacaggcag acatgctttg atgaaaatga 750

atgtgagcaa aacaacggtg gctgcagtga gatctgtgtg aacctcaaaa 800

actcctaccg ctgtgagtgt ggggttggcc gtgtgctaag aagtgatggc 850

aagacttgtg aagacgttga aggatgccac aataacaatg gtggctgcag 900

ccactcttgc cttggatctg agaaaggcta ccagtgtgaa tgtccccggg 950

gcctggtgct gtctgaggat aaccacactt gccaagtccc tgtgttgtgc 1000

aaatcaaatg ccattgaagt gaacatcccc agggagctgg ttggtggcct 1050

ggagctcttc ctgaccaaca cctcctgccg aggagtgtcc aacggcaccc 1100

atgtcaacat cctcttctct ctcaagacat gtggtacagt ggtcgatgtg 1150

gtgaatgaca agattgtggc cagcaacctc gtgacaggtc tacccaagca 1200

gaccccgggg agcagcgggg acttcatcat ccgaaccagc aagctgctga 1250

tcccggtgac ctgcgagttt ccacgcctgt acaccatttc tgaaggatac 1300

gttcccaacc ttcgaaactc cccactggaa atcatgagcc gaaatcatgg 1350

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ggcattgagc ccgtggtgca cgtgagcggc ttggaaagct ggtggagag 1500

ctgctttgcc accccacct ccaagatcga cgaggtcctg aaatactacc 1550

tcatccggga tggctgtgtt tcagatgact cggtaaagca gtacacatcc 1600
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159

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cgggatcacc tagcaaagca cttccaggtc cctgtcttca agtttgtggg 1650

caaagaccac aaggaagtgt ttctgcactg ccgggttctt gtctgtggag 1700

tgttggacga gcgttcccgc tgtgcccagg gttgccaccg gcgaatgcgt 1750

cgtggggcag gaggagagga ctcagccggt ctacagggcc agacgctaac 1800

aggcggcccg atccgcatcg actgggagga ctagttcgta gccatacctc 1850

gagtccctgc attggacggc tctgctcttt ggagcttctc ccccaccgc 1900

cctctaagaa catctgccaa cagctgggtt cagacttcac actgtgagtt 1950

cagactccca gcaccaactc actctgattc tggtccattc agtgggcaca 2000

ggtcacagca ctgctgaaca atgtggcctg ggtggggttt catctttcta 2050

gggttgaaaa ctaaactgtc cacccagaaa gacactcacc ccatttccct 2100

catttctttc ctacacttaa atacctcgtg tatggtgcaa tcagaccaca 2150

aaatcagaag ctgggtataa tatttcaagt tacaaaccct agaaaaatta 2200

aacagttact gaaattatga cttaaatacc caatgactcc ttaaatatgt 2250

aaattatagt tataccttga aatttcaatt caaatgcaga ctaattatag 2300

ggaatttgga agtgtatcaa taaaacagta tataatttt 2339
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<210> 110
<211> 545
<212> PRT
<213> Homo Sapien

<400> 110
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 Met Pro Pro Phe Leu Leu Leu Thr Cys Leu Phe Ile Thr Gly Thr
  1               5                  10                  15

 Ser Val Ser Pro Val Ala Leu Asp Pro Cys Ser Ala Tyr Ile Ser
                 20                  25                  30

 Leu Asn Glu Pro Trp Arg Asn Thr Asp His Gln Leu Asp Glu Ser
                 35                  40                  45

 Gln Gly Pro Pro Leu Cys Asp Asn His Val Asn Gly Glu Trp Tyr
                 50                  55                  60

 His Phe Thr Gly Met Ala Gly Asp Ala Met Pro Thr Phe Cys Ile
                 65                  70                  75

 Pro Glu Asn His Cys Gly Thr His Ala Pro Val Trp Leu Asn Gly
                 80                  85                  90

 Ser His Pro Leu Glu Gly Asp Gly Ile Val Gln Arg Gln Ala Cys
                 95                  100                 105
```

160

```
Ala Ser Phe Asn Gly Asn Cys Cys Leu Trp Asn Thr Thr Val Glu
            110             115             120

Val Lys Ala Cys Pro Gly Gly Tyr Tyr Val Tyr Arg Leu Thr Lys
            125             130             135

Pro Ser Val Cys Phe His Val Tyr Cys Gly His Phe Tyr Asp Ile
            140             145             150

Cys Asp Glu Asp Cys His Gly Ser Cys Ser Asp Thr Ser Glu Cys
            155             160             165

Thr Cys Ala Pro Gly Thr Val Leu Gly Pro Asp Arg Gln Thr Cys
            170             175             180

Phe Asp Glu Asn Glu Cys Glu Gln Asn Asn Gly Gly Cys Ser Glu
            185             190             195

Ile Cys Val Asn Leu Lys Asn Ser Tyr Arg Cys Glu Cys Gly Val
            200             205             210

Gly Arg Val Leu Arg Ser Asp Gly Lys Thr Cys Glu Asp Val Glu
            215             220             225

Gly Cys His Asn Asn Asn Gly Gly Cys Ser His Ser Cys Leu Gly
            230             235             240

Ser Glu Lys Gly Tyr Gln Cys Glu Cys Pro Arg Gly Leu Val Leu
            245             250             255

Ser Glu Asp Asn His Thr Cys Gln Val Pro Val Leu Cys Lys Ser
            260             265             270

Asn Ala Ile Glu Val Asn Ile Pro Arg Glu Leu Val Gly Gly Leu
            275             280             285

Glu Leu Phe Leu Thr Asn Thr Ser Cys Arg Gly Val Ser Asn Gly
            290             295             300

Thr His Val Asn Ile Leu Phe Ser Leu Lys Thr Cys Gly Thr Val
            305             310             315

Val Asp Val Val Asn Asp Lys Ile Val Ala Ser Asn Leu Val Thr
            320             325             330

Gly Leu Pro Lys Gln Thr Pro Gly Ser Ser Gly Asp Phe Ile Ile
            335             340             345

Arg Thr Ser Lys Leu Leu Ile Pro Val Thr Cys Glu Phe Pro Arg
            350             355             360

Leu Tyr Thr Ile Ser Glu Gly Tyr Val Pro Asn Leu Arg Asn Ser
            365             370             375

Pro Leu Glu Ile Met Ser Arg Asn His Gly Ile Phe Pro Phe Thr
            380             385             390
```

```
Leu Glu Ile Phe Lys Asp Asn Glu Phe Glu Glu Pro Tyr Arg Glu
            395             400             405

Ala Leu Pro Thr Leu Lys Leu Arg Asp Ser Leu Tyr Phe Gly Ile
            410             415             420

Glu Pro Val Val His Val Ser Gly Leu Glu Ser Leu Val Glu Ser
            425             430             435

Cys Phe Ala Thr Pro Thr Ser Lys Ile Asp Glu Val Leu Lys Tyr
            440             445             450

Tyr Leu Ile Arg Asp Gly Cys Val Ser Asp Asp Ser Val Lys Gln
            455             460             465

Tyr Thr Ser Arg Asp His Leu Ala Lys His Phe Gln Val Pro Val
            470             475             480

Phe Lys Phe Val Gly Lys Asp His Lys Glu Val Phe Leu His Cys
            485             490             495

Arg Val Leu Val Cys Gly Val Leu Asp Glu Arg Ser Arg Cys Ala
            500             505             510

Gln Gly Cys His Arg Arg Met Arg Arg Gly Ala Gly Gly Glu Asp
            515             520             525

Ser Ala Gly Leu Gln Gly Gln Thr Leu Thr Gly Gly Pro Ile Arg
            530             535             540

Ile Asp Trp Glu Asp
            545
```

<210> 111
<211> 2063
<212> DNA
<213> Homo Sapien

<400> 111

```
gagagaggca gcagcttgct cagcggacaa ggatgctggg cgtgagggac 50

caaggcctgc cctgcactcg ggcctcctcc agccagtgct gaccagggac 100

ttctgacctg ctggccagcc aggacctgtg tggggaggcc ctcctgctgc 150

cttggggtga caatctcagc tccaggctac agggagaccg ggaggatcac 200

agagccagca tgttacagga tcctgacagt gatcaacctc tgaacagcct 250

cgatgtcaaa cccctgcgca accccgtat ccccatggag accttcagaa 300

aggtggggat ccccatcatc atagcactac tgagcctggc gagtatcatc 350

attgtggttg tcctcatcaa ggtgattctg gataaatact acttcctctg 400

cgggcagcct ctccacttca tcccgaggaa gcagctgtgt gacggagagc 450
```

```
tggactgtcc cttgggggag gacgaggagc actgtgtcaa gagcttcccc 500

gaagggcctg cagtggcagt ccgcctctcc aaggaccgat ccacactgca 550

ggtgctggac tcggccacag ggaactggtt ctctgcctgt ttcgacaact 600

tcacagaagc tctcgctgag acagcctgta ggcagatggg ctacagcaga 650

gctgtggaga ttggcccaga ccaggatctg gatgttgttg aaatcacaga 700

aaacagccag gagcttcgca tgcggaactc aagtgggccc tgtctctcag 750

gctccctggt ctccctgcac tgtcttgcct gtgggaagag cctgaagacc 800

ccccgtgtgg tgggtgggga ggaggcctct gtggattctt ggccttggca 850

ggtcagcatc cagtacgaca aacagcacgt ctgtggaggg agcatcctgg 900

accccactg ggtcctcacg gcagcccact gcttcaggaa acataccgat 950

gtgttcaact ggaaggtgcg ggcaggctca gacaaactgg gcagcttccc 1000

atccctggct gtggccaaga tcatcatcat tgaattcaac cccatgtacc 1050

ccaaagacaa tgacatcgcc ctcatgaagc tgcagttccc actcactttc 1100

tcaggcacag tcaggcccat ctgtctgccc ttctttgatg aggagctcac 1150

tccagccacc ccactctgga tcattggatg gggctttacg aagcagaatg 1200

gagggaagat gtctgacata ctgctgcagg cgtcagtcca ggtcattgac 1250

agcacacggt gcaatgcaga cgatgcgtac caggggaag tcaccgagaa 1300

gatgatgtgt gcaggcatcc cggaagggg tgtggacacc tgccagggtg 1350

acagtggtgg gcccctgatg taccaatctg accagtggca tgtggtgggc 1400

atcgttagct ggggctatgg ctgcgggggc ccgagcaccc caggagtata 1450

caccaaggtc tcagcctatc tcaactggat ctacaatgtc tggaaggctg 1500

agctgtaatg ctgctgcccc tttgcagtgc tgggagccgc ttccttcctg 1550

ccctgcccac ctggggatcc cccaaagtca gacacagagc aagagtcccc 1600

ttgggtacac ccctctgccc acagcctcag catttcttgg agcagcaaag 1650

ggcctcaatt cctgtaagag accctcgcag cccagaggcg cccagaggaa 1700

gtcagcagcc ctagctcggc cacacttggt gctcccagca tcccagggag 1750

agacacagcc cactgaacaa ggtctcaggg gtattgctaa gccaagaagg 1800

aactttccca cactactgaa tggaagcagg ctgtcttgta aaagcccaga 1850

tcactgtggg ctggagagga gaaggaaagg gtctgcgcca gccctgtccg 1900
```

163

tcttcaccca tccccaagcc tactagagca agaaaccagt tgtaatataa 1950

aatgcactgc cctactgttg gtatgactac cgttacctac tgttgtcatt 2000

gttattacag ctatggccac tattattaaa gagctgtgta acatctctgg 2050

caaaaaaaaa aaa 2063

<210> 112
<211> 432
<212> PRT
<213> Homo Sapien

<400> 112
Met Leu Gln Asp Pro Asp Ser Asp Gln Pro Leu Asn Ser Leu Asp
 1   5   10   15

Val Lys Pro Leu Arg Lys Pro Arg Ile Pro Met Glu Thr Phe Arg
                20   25   30

Lys Val Gly Ile Pro Ile Ile Ile Ala Leu Leu Ser Leu Ala Ser
                35   40   45

Ile Ile Ile Val Val Val Leu Ile Lys Val Ile Leu Asp Lys Tyr
                50   55   60

Tyr Phe Leu Cys Gly Gln Pro Leu His Phe Ile Pro Arg Lys Gln
                65   70   75

Leu Cys Asp Gly Glu Leu Asp Cys Pro Leu Gly Glu Asp Glu Glu
                80   85   90

His Cys Val Lys Ser Phe Pro Glu Gly Pro Ala Val Ala Val Arg
                95   100   105

Leu Ser Lys Asp Arg Ser Thr Leu Gln Val Leu Asp Ser Ala Thr
                110   115   120

Gly Asn Trp Phe Ser Ala Cys Phe Asp Asn Phe Thr Glu Ala Leu
                125   130   135

Ala Glu Thr Ala Cys Arg Gln Met Gly Tyr Ser Arg Ala Val Glu
                140   145   150

Ile Gly Pro Asp Gln Asp Leu Asp Val Val Glu Ile Thr Glu Asn
                155   160   165

Ser Gln Glu Leu Arg Met Arg Asn Ser Ser Gly Pro Cys Leu Ser
                170   175   180

Gly Ser Leu Val Ser Leu His Cys Leu Ala Cys Gly Lys Ser Leu
                185   190   195

Lys Thr Pro Arg Val Val Gly Gly Glu Glu Ala Ser Val Asp Ser
                200   205   210

164

```
Trp Pro Trp Gln Val Ser Ile Gln Tyr Asp Lys Gln His Val Cys
                215                 220                 225

Gly Gly Ser Ile Leu Asp Pro His Trp Val Leu Thr Ala Ala His
                230                 235                 240

Cys Phe Arg Lys His Thr Asp Val Phe Asn Trp Lys Val Arg Ala
                245                 250                 255

Gly Ser Asp Lys Leu Gly Ser Phe Pro Ser Leu Ala Val Ala Lys
                260                 265                 270

Ile Ile Ile Ile Glu Phe Asn Pro Met Tyr Pro Lys Asp Asn Asp
                275                 280                 285

Ile Ala Leu Met Lys Leu Gln Phe Pro Leu Thr Phe Ser Gly Thr
                290                 295                 300

Val Arg Pro Ile Cys Leu Pro Phe Phe Asp Glu Glu Leu Thr Pro
                305                 310                 315

Ala Thr Pro Leu Trp Ile Ile Gly Trp Gly Phe Thr Lys Gln Asn
                320                 325                 330

Gly Gly Lys Met Ser Asp Ile Leu Leu Gln Ala Ser Val Gln Val
                335                 340                 345

Ile Asp Ser Thr Arg Cys Asn Ala Asp Asp Ala Tyr Gln Gly Glu
                350                 355                 360

Val Thr Glu Lys Met Met Cys Ala Gly Ile Pro Glu Gly Gly Val
                365                 370                 375

Asp Thr Cys Gln Gly Asp Ser Gly Gly Pro Leu Met Tyr Gln Ser
                380                 385                 390

Asp Gln Trp His Val Val Gly Ile Val Ser Trp Gly Tyr Gly Cys
                395                 400                 405

Gly Gly Pro Ser Thr Pro Gly Val Tyr Thr Lys Val Ser Ala Tyr
                410                 415                 420

Leu Asn Trp Ile Tyr Asn Val Trp Lys Ala Glu Leu
                425                 430
```

<210> 113
<211> 1768
<212> DNA
<213> Homo Sapien

<400> 113
 ggctggactg gaactcctgg tcccaagtga tccacccgcc tcagcctccc 50

 aaggtgctgt gattataggt gtaagccacc gtgtctggcc tctgaacaac 100

 tttttcagca actaaaaaag ccacaggagt tgaactgcta ggattctgac 150

165

```
tatgctgtgg tggctagtgc tcctactcct acctacatta aaatctgttt 200

tttgttctct tgtaactagc ctttaccttc ctaacacaga ggatctgtca 250

ctgtggctct ggcccaaacc tgaccttcac tctggaacga gaacagaggt 300

ttctacccac accgtcccct cgaagccggg gacagcctca ccttgctggc 350

ctctcgctgg agcagtgccc tcaccaactg tctcacgtct ggaggcactg 400

actcgggcag tgcaggtagc tgagcctctt ggtagctgcg gctttcaagg 450

tgggccttgc cctggccgta gaagggattg acaagcccga agatttcata 500

ggcgatggct cccactgccc aggcatcagc cttgctgtag tcaatcactg 550
ccctggggcc aggacgggcc gtggacacct gctcagaagc agtgggtgag 600

acatcacgct gcccgcccat ctaacctttt catgtcctgc acatcacctg 650

atccatgggc taatctgaac tctgtcccaa ggaacccaga gcttgagtga 700

gctgtggctc agacccagaa ggggtctgct tagaccacct ggtttatgtg 750

acaggacttg cattctcctg gaacatgagg gaacgccgga ggaaagcaaa 800

gtggcaggga aggaacttgt gccaaattat gggtcagaaa agatggaggt 850

gttgggttat cacaaggcat cgagtctcct gcattcagtg gacatgtggg 900

ggaagggctg ccgatggcgc atgacacact cgggactcac ctctggggcc 950

atcagacagc cgtttccgcc ccgatccacg taccagctgc tgaagggcaa 1000

ctgcaggccg atgctctcat cagccaggca gcagccaaaa tctgcgatca 1050

ccagccaggg gcagccgtct gggaaggagc aagcaaagtg accatttctc 1100

ctcccctcct tccctctgag aggccctcct atgtccctac taaagccacc 1150

agcaagacat agctgacagg ggctaatggc tcagtgttgg cccaggaggt 1200

cagcaaggcc tgagagctga tcagaagggc ctgctgtgcg aacacggaaa 1250
                                        `
tgcctccagt aagcacaggc tgcaaaatcc ccaggcaaag gactgtgtgg 1300

ctcaatttaa atcatgttct agtaattgga gctgtcccca agaccaaagg 1350

agctagagct tggttcaaat gatctccaag ggcccttata ccccaggaga 1400

ctttgatttg aatttgaaac cccaaatcca aacctaagaa ccaggtgcat 1450

taagaatcag ttattgccgg gtgtggtggc ctgtaatgcc aacattttgg 1500

gaggccgagg cgggtagatc acctgaggtc aggagttcaa gaccagcctg 1550

gccaacatgg tgaaacccct gtctctacta aaaatacaaa aaaactagcc 1600
```

166

```
aggcatggtg gtgtgtgcct gtatcccagc tactcgggag gctgagacag 1650

gagaattact tgaacctggg aggtgaagga ggctgagaca ggagaatcac 1700

ttcagcctga gcaacacagc gagactctgt ctcagaaaaa ataaaaaaag 1750

aattatggtt atttgtaa 1768
```

<210> 114
<211> 109
<212> PRT
<213> Homo Sapien

<400> 114

```
Met Leu Trp Trp Leu Val Leu Leu Leu Pro Thr Leu Lys Ser
 1               5              10              15

Val Phe Cys Ser Leu Val Thr Ser Leu Tyr Leu Pro Asn Thr Glu
                20              25              30

Asp Leu Ser Leu Trp Leu Trp Pro Lys Pro Asp Leu His Ser Gly
                35              40              45

Thr Arg Thr Glu Val Ser Thr His Thr Val Pro Ser Lys Pro Gly
                50              55              60

Thr Ala Ser Pro Cys Trp Pro Leu Ala Gly Ala Val Pro Ser Pro
                65              70              75

Thr Val Ser Arg Leu Glu Ala Leu Thr Arg Ala Val Gln Val Ala
                80              85              90

Glu Pro Leu Gly Ser Cys Gly Phe Gln Gly Gly Pro Cys Pro Gly
                95              100             105

Arg Arg Arg Asp
```

<210> 115
<211> 1197
<212> DNA
<213> Homo Sapien

<400> 115

```
cagcagtggt ctctcagtcc tctcaaagca aggaaagagt actgtgtgct 50

gagagaccat ggcaaagaat cctccagaga attgtgaaga ctgtcacatt 100

ctaaatgcag aagcttttaa atccaagaaa atatgtaaat cacttaagat 150

ttgtggactg gtgtttggta tcctggccct aactctaatt gtcctgtttt 200

gggggagcaa gcacttctgg ccggaggtac ccaaaaaagc ctatgacatg 250

gagcacactt tctacagcaa tggagagaag aagaagattt acatggaaat 300

tgatcctgtg accagaactg aaatattcag aagcggaaat ggcactgatg 350
```

```
aaacattgga agtgcacgac tttaaaaacg gatacactgg catctacttc 400

gtgggtcttc aaaaatgttt tatcaaaact cagattaaag tgattcctga 450

attttctgaa ccagaagagg aaatagatga gaatgaagaa attaccacaa 500

ctttctttga acagtcagtg atttgggtcc cagcagaaaa gcctattgaa 550

aaccgagatt ttcttaaaaa ttccaaaatt ctggagattt gtgataacgt 600

gaccatgtat tggatcaatc ccactctaat atcagtttct gagttacaag 650

actttgagga ggagggagaa gatcttcact ttcctgccaa cgaaaaaaaa 700

gggattgaac aaaatgaaca gtgggtggtc cctcaagtga aagtagagaa 750

gacccgtcac gccagacaag caagtgagga agaacttcca ataaatgact 800

atactgaaaa tggaatagaa tttgatccca tgctggatga gagaggttat 850

tgttgtattt actgccgtcg aggcaaccgc tattgccgcc gcgtctgtga 900

acctttacta ggctactacc catatccata ctgctaccaa ggaggacgag 950

tcatctgtcg tgtcatcatg ccttgtaact ggtgggtggc ccgcatgctg 1000

gggagggtct aataggaggt ttgagctcaa atgcttaaac tgctggcaac 1050

atataataaa tgcatgctat tcaatgaatt tctgcctatg aggcatctgg 1100

cccctggtag ccagctctcc agaattactt gtaggtaatt cctctcttca 1150

tgttctaata aacttctaca ttatcaccaa aaaaaaaaaa aaaaaaa 1197
```

<210> 116
<211> 317
<212> PRT
<213> Homo Sapien

<400> 116

```
Met Ala Lys Asn Pro Pro Glu Asn Cys Glu Asp Cys His Ile Leu
 1               5                  10                  15

Asn Ala Glu Ala Phe Lys Ser Lys Lys Ile Cys Lys Ser Leu Lys
                20                  25                  30

Ile Cys Gly Leu Val Phe Gly Ile Leu Ala Leu Thr Leu Ile Val
                35                  40                  45

Leu Phe Trp Gly Ser Lys His Phe Trp Pro Glu Val Pro Lys Lys
                50                  55                  60

Ala Tyr Asp Met Glu His Thr Phe Tyr Ser Asn Gly Glu Lys Lys
                65                  70                  75

Lys Ile Tyr Met Glu Ile Asp Pro Val Thr Arg Thr Glu Ile Phe
```

Arg Ser Gly Asn Gly Thr Asp Glu Thr Leu Glu Val His Asp Phe
                95   100   105

Lys Asn Gly Tyr Thr Gly Ile Tyr Phe Val Gly Leu Gln Lys Cys
                110   115   120

Phe Ile Lys Thr Gln Ile Lys Val Ile Pro Glu Phe Ser Glu Pro
                125   130   135

Glu Glu Glu Ile Asp Glu Asn Glu Glu Ile Thr Thr Thr Phe Phe
                140   145   150

Glu Gln Ser Val Ile Trp Val Pro Ala Glu Lys Pro Ile Glu Asn
                155   160   165

Arg Asp Phe Leu Lys Asn Ser Lys Ile Leu Glu Ile Cys Asp Asn
                170   175   180

Val Thr Met Tyr Trp Ile Asn Pro Thr Leu Ile Ser Val Ser Glu
                185   190   195

Leu Gln Asp Phe Glu Glu Glu Gly Glu Asp Leu His Phe Pro Ala
                200   205   210

Asn Glu Lys Lys Gly Ile Glu Gln Asn Glu Gln Trp Val Val Pro
                215   220   225

Gln Val Lys Val Glu Lys Thr Arg His Ala Arg Gln Ala Ser Glu
                230   235   240

Glu Glu Leu Pro Ile Asn Asp Tyr Thr Glu Asn Gly Ile Glu Phe
                245   250   255

Asp Pro Met Leu Asp Glu Arg Gly Tyr Cys Cys Ile Tyr Cys Arg
                260   265   270

Arg Gly Asn Arg Tyr Cys Arg Arg Val Cys Glu Pro Leu Leu Gly
                275   280   285

Tyr Tyr Pro Tyr Pro Tyr Cys Tyr Gln Gly Gly Arg Val Ile Cys
                290   295   300

Arg Val Ile Met Pro Cys Asn Trp Trp Val Ala Arg Met Leu Gly
                305   310   315

Arg Val

<210> 117
<211> 2121
<212> DNA
<213> Homo Sapien

<400> 117
 gagctcccct caggagcgcg ttagcttcac accttcggca gcaggagggc 50

```
ggcagcttct cgcaggcggc agggcgggcg gccaggatca tgtccaccac 100

cacatgccaa gtggtggcgt tcctcctgtc catcctgggg ctggccggct 150

gcatcgcggc caccgggatg gacatgtgga gcacccagga cctgtacgac 200

aaccccgtca cctccgtgtt ccagtacgaa gggctctgga ggagctgcgt 250

gaggcagagt tcaggcttca ccgaatgcag gccctatttc accatcctgg 300

gacttccagc catgctgcag gcagtgcgag ccctgatgat cgtaggcatc 350

gtcctgggtg ccattggcct cctggtatcc atctttgccc tgaaatgcat 400

ccgcattggc agcatggagg actctgccaa agccaacatg acactgacct 450

ccgggatcat gttcattgtc tcaggtcttt gtgcaattgc tggagtgtct 500

gtgtttgcca acatgctggt gactaacttc tggatgtcca cagctaacat 550

gtacaccggc atgggtggga tggtgcagac tgttcagacc aggtacacat 600

ttggtgcggc tctgttcgtg ggctgggtcg ctggaggcct cacactaatt 650

gggggtgtga tgatgtgcat cgcctgccgg ggcctggcac cagaagaaac 700

caactacaaa gccgtttctt atcatgcctc aggccacagt gttgcctaca 750

agcctggagg cttcaaggcc agcactggct ttgggtccaa caccaaaaac 800

aagaagatat acgatggagg tgcccgcaca gaggacgagg tacaatctta 850

tccttccaag cacgactatg tgtaatgctc taagacctct cagcacgggc 900

ggaagaaact cccggagagc tcacccaaaa aacaaggaga tcccatctag 950

atttcttctt gcttttgact cacagctgga agttagaaaa gcctcgattt 1000

catctttgga gaggccaaat ggtcttagcc tcagtctctg tctctaaata 1050

ttccaccata aaacagctga gttatttatg aattagaggc tatagctcac 1100

attttcaatc ctctatttct tttttaaat ataactttct actctgatga 1150

gagaatgtgg ttttaatctc tctctcacat tttgatgatt tagacagact 1200

ccccctcttc ctcctagtca ataaacccat tgatgatcta tttcccagct 1250

tatccccaag aaaacttttg aaaggaaaga gtagacccaa agatgttatt 1300

ttctgctgtt tgaattttgt ctccccaccc ccaacttggc tagtaataaa 1350

cacttactga agaagaagca ataagagaaa gatatttgta atctctccag 1400

cccatgatct cggttttctt acactgtgat cttaaaagtt accaaaccaa 1450
```

170

```
agtcattttc agtttgaggc aaccaaacct ttctactgct gttgacatct 1500

tcttattaca gcaacaccat tctaggagtt tcctgagctc tccactggag 1550

tcctctttct gtcgcgggtc agaaattgtc cctagatgaa tgagaaaatt 1600

attttttta atttaagtcc taaatatagt taaaataaat aatgttttag 1650

taaaatgata cactatctct gtgaaatagc ctcacccta catgtggata 1700

gaaggaaatg aaaaaataat tgctttgaca ttgtctatat ggtactttgt 1750

aaagtcatgc ttaagtacaa attccatgaa aagctcacac ctgtaatcct 1800

agcactttgg gaggctgagg aggaaggatc acttgagccc agaagttcga 1850

gactagcctg ggcaacatgg agaagccctg tctctacaaa atacagagag 1900

aaaaaatcag ccagtcatgg tggcatacac ctgtagtccc agcattccgg 1950

gaggctgagg tgggaggatc acttgagccc agggaggttg gggctgcagt 2000

gagccatgat cacaccactg cactccagcc aggtgacata gcgagatcct 2050

gtctaaaaaa ataaaaaata aataatggaa cacagcaagt cctaggaagt 2100

aggttaaaac taattcttta a 2121
```

<210> 118
<211> 261
<212> PRT
<213> Homo Sapien

<400> 118

```
Met Ser Thr Thr Thr Cys Gln Val Val Ala Phe Leu Leu Ser Ile
  1               5                  10                  15

Leu Gly Leu Ala Gly Cys Ile Ala Ala Thr Gly Met Asp Met Trp
             20                  25                  30

Ser Thr Gln Asp Leu Tyr Asp Asn Pro Val Thr Ser Val Phe Gln
             35                  40                  45

Tyr Glu Gly Leu Trp Arg Ser Cys Val Arg Gln Ser Ser Gly Phe
             50                  55                  60

Thr Glu Cys Arg Pro Tyr Phe Thr Ile Leu Gly Leu Pro Ala Met
             65                  70                  75

Leu Gln Ala Val Arg Ala Leu Met Ile Val Gly Ile Val Leu Gly
             80                  85                  90

Ala Ile Gly Leu Leu Val Ser Ile Phe Ala Leu Lys Cys Ile Arg
             95                 100                 105

Ile Gly Ser Met Glu Asp Ser Ala Lys Ala Asn Met Thr Leu Thr
            110                 115                 120
```

```
Ser Gly Ile Met Phe Ile Val Ser Gly Leu Cys Ala Ile Ala Gly
            125                 130                 135

Val Ser Val Phe Ala Asn Met Leu Val Thr Asn Phe Trp Met Ser
            140                 145                 150

Thr Ala Asn Met Tyr Thr Gly Met Gly Gly Met Val Gln Thr Val
            155                 160                 165

Gln Thr Arg Tyr Thr Phe Gly Ala Ala Leu Phe Val Gly Trp Val
            170                 175                 180

Ala Gly Gly Leu Thr Leu Ile Gly Gly Val Met Met Cys Ile Ala
            185                 190                 195

Cys Arg Gly Leu Ala Pro Glu Glu Thr Asn Tyr Lys Ala Val Ser
            200                 205                 210

Tyr His Ala Ser Gly His Ser Val Ala Tyr Lys Pro Gly Gly Phe
            215                 220                 225

Lys Ala Ser Thr Gly Phe Gly Ser Asn Thr Lys Asn Lys Lys Ile
            230                 235                 240

Tyr Asp Gly Gly Ala Arg Thr Glu Asp Glu Val Gln Ser Tyr Pro
            245                 250                 255

Ser Lys His Asp Tyr Val
            260
```

<210> 119
<211> 2010
<212> DNA
<213> Homo Sapien

<400> 119

```
ggaaaaactg ttctcttctg tggcacagag aaccctgctt caaagcagaa 50

gtagcagttc cggagtccag ctggctaaaa ctcatcccag aggataatgg 100

caacccatgc cttagaaatc gctgggctgt ttcttggtgg tgttggaatg 150

gtgggcacag tggctgtcac tgtcatgcct cagtggagag tgtcggcctt 200

cattgaaaac aacatcgtgg tttttgaaaa cttctgggaa ggactgtgga 250

tgaattgcgt gaggcaggct aacatcagga tgcagtgcaa aatctatgat 300

tccctgctgg ctctttctcc ggacctacag gcagccagag gactgatgtg 350

tgctgcttcc gtgatgtcct tcttggcttt catgatggcc atccttggca 400

tgaaatgcac caggtgcacg ggggacaatg agaaggtgaa ggctcacatt 450

ctgctgacgg ctggaatcat cttcatcatc acgggcatgg tggtgctcat 500
```

172

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ccctgtgagc tgggttgcca atgccatcat cagagatttc tataactcaa 550

tagtgaatgt tgcccaaaaa cgtgagcttg gagaagctct ctacttagga 600

tggaccacgg cactggtgct gattgttgga ggagctctgt tctgctgcgt 650

tttttgttgc aacgaaaaga gcagtagcta cagatactcg ataccttccc 700

atcgcacaac ccaaaaaagt tatcacaccg gaaagaagtc accgagcgtc 750

tactccagaa gtcagtatgt gtagttgtgt atgttttttt aactttacta 800

taaagccatg caaatgacaa aaatctatat tactttctca aaatggaccc 850

caaagaaact ttgatttact gttcttaact gcctaatctt aattacagga 900

actgtgcatc agctatttat gattctataa gctatttcag cagaatgaga 950

tattaaaccc aatgctttga ttgttctaga aagtatagta atttgttttc 1000

taaggtggtt caagcatcta ctctttttat catttacttc aaaatgacat 1050

tgctaaagac tgcattattt tactactgta atttctccac gacatagcat 1100

tatgtacata gatgagtgta acatttatat ctcacataga gacatgctta 1150

tatggtttta tttaaaatga aatgccagtc cattcactg aataaataga 1200

actcaactat tgcttttcag ggaaatcatg gatagggttg aagaaggtta 1250

ctattaattg tttaaaaaca gcttagggat taatgtcctc catttataat 1300

gaagattaaa atgaaggctt taatcagcat tgtaaaggaa attgaatggc 1350

tttctgatat gctgtttttt agcctaggag ttagaaatcc taacttcttt 1400

atcctcttct cccagaggct tttttttct tgtgtattaa attaacattt 1450

ttaaaacgca gatattttgt caaggggctt tgcattcaaa ctgcttttcc 1500

agggctatac tcagaagaaa gataaaagtg tgatctaaga aaaagtgatg 1550

gttttaggaa agtgaaaata ttttgtttt tgtatttgaa gaagaatgat 1600

gcattttgac aagaaatcat atatgtatgg atatattta ataagtattt 1650

gagtacagac tttgaggttt catcaatata aataaaagag cagaaaaata 1700

tgtcttggtt ttcatttgct taccaaaaaa acaacaacaa aaaagttgt 1750

cctttgagaa cttcacctgc tcctatgtgg gtacctgagt caaaattgtc 1800

attttgttc tgtgaaaaat aaattccctt cttgtaccat ttctgtttag 1850

ttttactaaa atctgtaaat actgtatttt tctgtttatt ccaaatttga 1900

tgaaactgac aatccaattt gaaagtttgt gtcgacgtct gtctagctta 1950
```

173

```
aatgaatgtg ttctatttgc tttatacatt tatattaata aattgtacat 2000

ttttctaatt 2010
```

<210> 120
<211> 225
<212> PRT
<213> Homo Sapien

<400> 120
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Met Ala Thr His Ala Leu Glu Ile Ala Gly Leu Phe Leu Gly Gly
 1               5                   10                  15

Val Gly Met Val Gly Thr Val Ala Val Thr Val Met Pro Gln Trp
                20                  25                  30

Arg Val Ser Ala Phe Ile Glu Asn Asn Ile Val Val Phe Glu Asn
                35                  40                  45

Phe Trp Glu Gly Leu Trp Met Asn Cys Val Arg Gln Ala Asn Ile
                50                  55                  60

Arg Met Gln Cys Lys Ile Tyr Asp Ser Leu Leu Ala Leu Ser Pro
                65                  70                  75

Asp Leu Gln Ala Ala Arg Gly Leu Met Cys Ala Ala Ser Val Met
                80                  85                  90

Ser Phe Leu Ala Phe Met Met Ala Ile Leu Gly Met Lys Cys Thr
                95                  100                 105

Arg Cys Thr Gly Asp Asn Glu Lys Val Lys Ala His Ile Leu Leu
                110                 115                 120

Thr Ala Gly Ile Ile Phe Ile Ile Thr Gly Met Val Val Leu Ile
                125                 130                 135

Pro Val Ser Trp Val Ala Asn Ala Ile Ile Arg Asp Phe Tyr Asn
                140                 145                 150

Ser Ile Val Asn Val Ala Gln Lys Arg Glu Leu Gly Glu Ala Leu
                155                 160                 165

Tyr Leu Gly Trp Thr Thr Ala Leu Val Leu Ile Val Gly Gly Ala
                170                 175                 180

Leu Phe Cys Cys Val Phe Cys Cys Asn Glu Lys Ser Ser Ser Tyr
                185                 190                 195

Arg Tyr Ser Ile Pro Ser His Arg Thr Thr Gln Lys Ser Tyr His
                200                 205                 210

Thr Gly Lys Lys Ser Pro Ser Val Tyr Ser Arg Ser Gln Tyr Val
                215                 220                 225
```

<210> 121

174

<211> 1257
<212> DNA
<213> Homo Sapien

<400> 121
ggagagaggc gcgcgggtga aaggcgcatt gatgcagcct gcggcggcct 50

cggagcgcgg cggagccaga cgctgaccac gttcctctcc tcggtctcct 100

ccgcctccag ctccgcgctg cccggcagcc gggagccatg cgaccccagg 150

gccccgccgc ctccccgcag cggctccgcg gcctcctgct gctcctgctg 200

ctgcagctgc ccgcgccgtc gagcgcctct gagatcccca aggggaagca 250

aaaggcgcag ctccggcaga gggaggtggt ggacctgtat aatggaatgt 300

gcttacaagg gccagcagga gtgcctggtc gagacgggag ccctggggcc 350

aatgttattc cgggtacacc tgggatccca ggtcgggatg gattcaaagg 400

agaaaagggg gaatgtctga gggaaagctt tgaggagtcc tggacaccca 450

actacaagca gtgttcatgg agttcattga attatggcat agatcttggg 500

aaaattgcgg agtgtacatt tacaaagatg cgttcaaata gtgctctaag 550

agttttgttc agtggctcac ttcggctaaa atgcagaaat gcatgctgtc 600

agcgttggta tttcacattc aatggagctg aatgttcagg acctcttccc 650

attgaagcta taatttattt ggaccaagga agccctgaaa tgaattcaac 700

aattaatatt catcgcactt cttctgtgga aggactttgt gaaggaattg 750

gtgctggatt agtggatgtt gctatctggg ttggcacttg ttcagattac 800

ccaaaaggag atgcttctac tggatggaat tcagtttctc gcatcattat 850

tgaagaacta ccaaaataaa tgctttaatt ttcatttgct acctcttttt 900

ttattatgcc ttggaatggt tcacttaaat gacattttaa ataagtttat 950
gtatacatct gaatgaaaag caaagctaaa tatgtttaca gaccaaagtg 1000

tgatttcaca ctgtttttaa atctagcatt attcattttg cttcaatcaa 1050

aagtggtttc aatatttttt ttagttggtt agaatacttt cttcatagtc 1100

acattctctc aacctataat ttggaatatt gttgtggtct tttgtttttt 1150

ctcttagtat agcatttta aaaaaatata aaagctacca atctttgtac 1200

aatttgtaaa tgttaagaat ttttttata tctgttaaat aaaaattatt 1250

tccaaca 1257

<210> 122

<211> 243
<212> PRT
<213> Homo Sapien

<400> 122

```
Met Arg Pro Gln Gly Pro Ala Ala Ser Pro Gln Arg Leu Arg Gly
  1               5                  10                  15

Leu Leu Leu Leu Leu Leu Leu Gln Leu Pro Ala Pro Ser Ser Ala
                 20                  25                  30

Ser Glu Ile Pro Lys Gly Lys Gln Lys Ala Gln Leu Arg Gln Arg
                 35                  40                  45

Glu Val Val Asp Leu Tyr Asn Gly Met Cys Leu Gln Gly Pro Ala
                 50                  55                  60

Gly Val Pro Gly Arg Asp Gly Ser Pro Gly Ala Asn Val Ile Pro
                 65                  70                  75

Gly Thr Pro Gly Ile Pro Gly Arg Asp Gly Phe Lys Gly Glu Lys
                 80                  85                  90

Gly Glu Cys Leu Arg Glu Ser Phe Glu Glu Ser Trp Thr Pro Asn
                 95                 100                 105

Tyr Lys Gln Cys Ser Trp Ser Ser Leu Asn Tyr Gly Ile Asp Leu
                110                 115                 120

Gly Lys Ile Ala Glu Cys Thr Phe Thr Lys Met Arg Ser Asn Ser
                125                 130                 135

Ala Leu Arg Val Leu Phe Ser Gly Ser Leu Arg Leu Lys Cys Arg
                140                 145                 150

Asn Ala Cys Cys Gln Arg Trp Tyr Phe Thr Phe Asn Gly Ala Glu
                155                 160                 165

Cys Ser Gly Pro Leu Pro Ile Glu Ala Ile Ile Tyr Leu Asp Gln
                170                 175                 180

Gly Ser Pro Glu Met Asn Ser Thr Ile Asn Ile His Arg Thr Ser
                185                 190                 195

Ser Val Glu Gly Leu Cys Glu Gly Ile Gly Ala Gly Leu Val Asp
                200                 205                 210

Val Ala Ile Trp Val Gly Thr Cys Ser Asp Tyr Pro Lys Gly Asp
                215                 220                 225

Ala Ser Thr Gly Trp Asn Ser Val Ser Arg Ile Ile Ile Glu Glu
                230                 235                 240

Leu Pro Lys
```

<210> 123

<211> 2379
<212> DNA
<213> Homo Sapien

<400> 123
gctgagcgtg tgcgcggtac ggggctctcc tgccttctgg gctccaacgc 50

agctctgtgg ctgaactggg tgctcatcac gggaactgct gggctatgga 100

atacagatgt ggcagctcag gtagccccaa attgcctgga agaatacatc 150

atgttttcg ataagaagaa attgtaggat ccagtttttt ttttaaccgc 200

cccctcccca cccccaaaa aaactgtaaa gatgcaaaaa cgtaatatcc 250

atgaagatcc tattacctag gaagattttg atgttttgct gcgaatgcgg 300

tgttgggatt tatttgttct tggagtgttc tgcgtggctg gcaaagaata 350

atgttccaaa atcggtccat ctcccaaggg gtccaatttt tcttcctggg 400

tgtcagcgag ccctgactca ctacagtgca gctgacaggg gctgtcatgc 450

aactggcccc taagccaaag caaaagacct aaggacgacc tttgaacaat 500

acaaaggatg ggtttcaatg taattaggct actgagcgga tcagctgtag 550

cactggttat agcccccact gtcttactga caatgctttc ttctgccgaa 600

cgaggatgcc ctaagggctg taggtgtgaa ggcaaaatgg tatattgtga 650

atctcagaaa ttacaggaga taccctcaag tatatctgct ggttgcttag 700

gtttgtccct tcgctataac agccttcaaa aacttaagta taatcaattt 750

aaagggctca accagctcac ctggctatac cttgaccata accatatcag 800

caatattgac gaaaatgctt ttaatggaat acgcagactc aaagagctga 850

ttcttagttc caatagaatc tcctattttc ttaacaatac cttcagacct 900

gtgacaaatt tacggaactt ggatctgtcc tataatcagc tgcattctct 950

gggatctgaa cagtttcggg gcttgcggaa gctgctgagt ttacatttac 1000

ggtctaactc cctgagaacc atccctgtgc gaatattcca agactgccgc 1050

aacctggaac ttttggacct gggatataac cggatccgaa gtttagccag 1100
gaatgtcttt gctggcatga tcagactcaa agaacttcac ctggagcaca 1150

atcaattttc caagctcaac ctggcccttt ttccaaggtt ggtcagcctt 1200

cagaaccttt acttgcagtg gaataaaatc agtgtcatag gacagaccat 1250

gtcctggacc tggagctcct tacaaaggct tgatttatca ggcaatgaga 1300

tcgaagcttt cagtggaccc agtgttttcc agtgtgtccc gaatctgcag 1350

177

cgcctcaacc tggattccaa caagctcaca tttattggtc aagagatttt 1400

ggattcttgg atatccctca atgacatcag tcttgctggg aatatatggg 1450

aatgcagcag aaatatttgc tcccttgtaa actggctgaa aagttttaaa 1500

ggtctaaggg agaatacaat tatctgtgcc agtcccaaag agctgcaagg 1550

agtaaatgtg atcgatgcag tgaagaacta cagcatctgt ggcaaaagta 1600

ctacagagag gtttgatctg gccagggctc tcccaaagcc gacgtttaag 1650

cccaagctcc ccaggccgaa gcatgagagc aaaccccctt gcccccgac 1700

ggtgggagcc acagagcccg gcccagagac cgatgctgac gccgagcaca 1750

tctctttcca taaaatcatc gcgggcagcg tggcgctttt cctgtccgtg 1800

ctcgtcatcc tgctggttat ctacgtgtca tggaagcggt accctgcgag 1850

catgaagcag ctgcagcagc gctccctcat gcgaaggcac aggaaaaaga 1900

aaagacagtc cctaaagcaa atgactccca gcacccagga attttatgta 1950

gattataaac ccaccaacac ggagaccagc gagatgctgc tgaatgggac 2000

gggaccctgc acctataaca aatcgggctc cagggagtgt gaggtatgaa 2050

ccattgtgat aaaaagagct cttaaaagct gggaaataag tggtgcttta 2100

ttgaactctg gtgactatca agggaacgcg atgccccccc tccccttccc 2150

tctccctctc actttggtgg caagatcctt ccttgtccgt tttagtgcat 2200

tcataatact ggtcattttc ctctcataca taatcaaccc attgaaattt 2250

aaataccaca atcaatgtga agcttgaact ccggtttaat ataataccta 2300

ttgtataaga ccctttactg attccattaa tgtcgcattt gttttaagat 2350

aaaacttctt tcataggtaa aaaaaaaaa 2379

<210> 124
<211> 513
<212> PRT
<213> Homo Sapien

<400> 124
Met Gly Phe Asn Val Ile Arg Leu Leu Ser Gly Ser Ala Val Ala
 1   5   10   15
Leu Val Ile Ala Pro Thr Val Leu Leu Thr Met Leu Ser Ser Ala
                20   25   30

Glu Arg Gly Cys Pro Lys Gly Cys Arg Cys Glu Gly Lys Met Val
                35   40   45

178

```
Tyr Cys Glu Ser Gln Lys Leu Gln Glu Ile Pro Ser Ser Ile Ser
                50              55              60

Ala Gly Cys Leu Gly Leu Ser Leu Arg Tyr Asn Ser Leu Gln Lys
                65              70              75

Leu Lys Tyr Asn Gln Phe Lys Gly Leu Asn Gln Leu Thr Trp Leu
                80              85              90

Tyr Leu Asp His Asn His Ile Ser Asn Ile Asp Glu Asn Ala Phe
                95              100             105

Asn Gly Ile Arg Arg Leu Lys Glu Leu Ile Leu Ser Ser Asn Arg
                110             115             120

Ile Ser Tyr Phe Leu Asn Asn Thr Phe Arg Pro Val Thr Asn Leu
                125             130             135

Arg Asn Leu Asp Leu Ser Tyr Asn Gln Leu His Ser Leu Gly Ser
                140             145             150

Glu Gln Phe Arg Gly Leu Arg Lys Leu Leu Ser Leu His Leu Arg
                155             160             165

Ser Asn Ser Leu Arg Thr Ile Pro Val Arg Ile Phe Gln Asp Cys
                170             175             180

Arg Asn Leu Glu Leu Leu Asp Leu Gly Tyr Asn Arg Ile Arg Ser
                185             190             195

Leu Ala Arg Asn Val Phe Ala Gly Met Ile Arg Leu Lys Glu Leu
                200             205             210

His Leu Glu His Asn Gln Phe Ser Lys Leu Asn Leu Ala Leu Phe
                215             220             225

Pro Arg Leu Val Ser Leu Gln Asn Leu Tyr Leu Gln Trp Asn Lys
                230             235             240

Ile Ser Val Ile Gly Gln Thr Met Ser Trp Thr Trp Ser Ser Leu
                245             250             255

Gln Arg Leu Asp Leu Ser Gly Asn Glu Ile Glu Ala Phe Ser Gly
                260             265             270

Pro Ser Val Phe Gln Cys Val Pro Asn Leu Gln Arg Leu Asn Leu
                275             280             285

Asp Ser Asn Lys Leu Thr Phe Ile Gly Gln Glu Ile Leu Asp Ser
                290             295             300

Trp Ile Ser Leu Asn Asp Ile Ser Leu Ala Gly Asn Ile Trp Glu
                305             310             315

Cys Ser Arg Asn Ile Cys Ser Leu Val Asn Trp Leu Lys Ser Phe
                320             325             330
```

Lys Gly Leu Arg Glu Asn Thr Ile Ile Cys Ala Ser Pro Lys Glu
                335   340   345

Leu Gln Gly Val Asn Val Ile Asp Ala Val Lys Asn Tyr Ser Ile
                350   355   360

Cys Gly Lys Ser Thr Thr Glu Arg Phe Asp Leu Ala Arg Ala Leu
                365   370   375

Pro Lys Pro Thr Phe Lys Pro Lys Leu Pro Arg Pro Lys His Glu
                380   385   390

Ser Lys Pro Pro Leu Pro Pro Thr Val Gly Ala Thr Glu Pro Gly
                395   400   405

Pro Glu Thr Asp Ala Asp Ala Glu His Ile Ser Phe His Lys Ile
                410   415   420

Ile Ala Gly Ser Val Ala Leu Phe Leu Ser Val Leu Val Ile Leu
                425   430   435

Leu Val Ile Tyr Val Ser Trp Lys Arg Tyr Pro Ala Ser Met Lys
                440   445   450

Gln Leu Gln Gln Arg Ser Leu Met Arg Arg His Arg Lys Lys Lys
                455   460   465

Arg Gln Ser Leu Lys Gln Met Thr Pro Ser Thr Gln Glu Phe Tyr
                470   475   480

Val Asp Tyr Lys Pro Thr Asn Thr Glu Thr Ser Glu Met Leu Leu
                485   490   495

Asn Gly Thr Gly Pro Cys Thr Tyr Asn Lys Ser Gly Ser Arg Glu
                500   505   510

Cys Glu Val

<210> 125
<211> 998
<212> DNA
<213> Homo Sapien

<400> 125
 ccgttatcgt cttgcgctac tgctgaatgt ccgtcccgga ggaggaggag 50

 aggcttttgc cgctgaccca gagatggccc cgagcgagca aattcctact 100

 gtccggctgc gcggctaccg tggccgagct agcaaccttt cccctggatc 150

 tcacaaaaac tcgactccaa atgcaaggag aagcagctct tgctcggttg 200

 ggagacggtg caagagaatc tgcccccctat aggggaatgg tgcgcacagc 250

 cctagggatc attgaagagg aaggctttct aaagctttgg caaggagtga 300

cacccgccat ttacagacac gtagtgtatt ctggaggtcg aatggtcaca 350

tatgaacatc tccgagaggt tgtgtttggc aaaagtgaag atgagcatta 400

tcccctttgg aaatcagtca ttggagggat gatggctggt gttattggcc 450

agtttttagc caatccaact gacctagtga aggttcagat gcaaatggaa 500

ggaaaaagga aactggaagg aaaaccattg cgatttcgtg gtgtacatca 550

tgcatttgca aaaatcttag ctgaaggagg aatacgaggg ctttgggcag 600

gctgggtacc caatatacaa agagcagcac tggtgaatat gggagattta 650

accacttatg atacagtgaa acactacttg gtattgaata caccacttga 700

ggacaatatc atgactcacg gtttatcaag tttatgttct ggactggtag 750

cttctattct gggaacacca gccgatgtca tcaaaagcag aataatgaat 800

caaccacgag ataaacaagg aaggggactt ttgtataaat catcgactga 850

ctgcttgatt caggctgttc aaggtgaagg attcatgagt ctatataaag 900

gctttttacc atcttggctg agaatgaccc cttggtcaat ggtgttctgg 950

cttacttatg aaaaaatcag agagatgagt ggagtcagtc cattttaa 998

<210> 126
<211> 323
<212> PRT
<213> Homo Sapien

<400> 126
 Met Ser Val Pro Glu Glu Glu Glu Arg Leu Leu Pro Leu Thr Gln
   1   5   10   15

 Arg Trp Pro Arg Ala Ser Lys Phe Leu Leu Ser Gly Cys Ala Ala
                    20   25   30

 Thr Val Ala Glu Leu Ala Thr Phe Pro Leu Asp Leu Thr Lys Thr
                    35   40   45

 Arg Leu Gln Met Gln Gly Glu Ala Ala Leu Ala Arg Leu Gly Asp
                    50   55   60

 Gly Ala Arg Glu Ser Ala Pro Tyr Arg Gly Met Val Arg Thr Ala
                    65   70   75

 Leu Gly Ile Ile Glu Glu Glu Gly Phe Leu Lys Leu Trp Gln Gly
                    80   85   90

 Val Thr Pro Ala Ile Tyr Arg His Val Val Tyr Ser Gly Gly Arg
                    95   100   105

 Met Val Thr Tyr Glu His Leu Arg Glu Val Val Phe Gly Lys Ser
                    110   115   120

181

```
Glu Asp Glu His Tyr Pro Leu Trp Lys Ser Val Ile Gly Gly Met
                125                 130                 135
Met Ala Gly Val Ile Gly Gln Phe Leu Ala Asn Pro Thr Asp Leu
                140                 145                 150

Val Lys Val Gln Met Gln Met Glu Gly Lys Arg Lys Leu Glu Gly
                155                 160                 165

Lys Pro Leu Arg Phe Arg Gly Val His His Ala Phe Ala Lys Ile
                170                 175                 180

Leu Ala Glu Gly Gly Ile Arg Gly Leu Trp Ala Gly Trp Val Pro
                185                 190                 195

Asn Ile Gln Arg Ala Ala Leu Val Asn Met Gly Asp Leu Thr Thr
                200                 205                 210

Tyr Asp Thr Val Lys His Tyr Leu Val Leu Asn Thr Pro Leu Glu
                215                 220                 225

Asp Asn Ile Met Thr His Gly Leu Ser Ser Leu Cys Ser Gly Leu
                230                 235                 240

Val Ala Ser Ile Leu Gly Thr Pro Ala Asp Val Ile Lys Ser Arg
                245                 250                 255

Ile Met Asn Gln Pro Arg Asp Lys Gln Gly Arg Gly Leu Leu Tyr
                260                 265                 270

Lys Ser Ser Thr Asp Cys Leu Ile Gln Ala Val Gln Gly Glu Gly
                275                 280                 285

Phe Met Ser Leu Tyr Lys Gly Phe Leu Pro Ser Trp Leu Arg Met
                290                 295                 300

Thr Pro Trp Ser Met Val Phe Trp Leu Thr Tyr Glu Lys Ile Arg
                305                 310                 315

Glu Met Ser Gly Val Ser Pro Phe
                320

<210> 127
<211> 1505
<212> DNA
<213> Homo Sapien

<400> 127
 cgcggatcgg acccaagcag gtcggcggcg gcggcaggag agcggccggg 50

 cgtcagctcc tcgacccccg tgtcgggcta gtccagcgag gcggacgggc 100

 ggcgtgggcc catggccagg cccggcatgg agcggtggcg cgaccggctg 150

 gcgctggtga cgggggcctc ggggggcatc ggcgcggccg tggcccgggc 200

 cctggtccag cagggactga aggtggtggg ctgcgcccgc actgtgggca 250
```

182

```
acatcgagga gctggctgct gaatgtaaga gtgcaggcta ccccgggact 300

ttgatcccct acagatgtga cctatcaaat gaagaggaca tcctctccat 350

gttctcagct atccgttctc agcacagcgg tgtagacatc tgcatcaaca 400
atgctggctt ggcccggcct gacaccctgc tctcaggcag caccagtggt 450

tggaaggaca tgttcaatgt gaacgtgctg gccctcagca tctgcacacg 500

ggaagcctac cagtccatga aggagcggaa tgtggacgat gggcacatca 550

ttaacatcaa tagcatgtct ggccaccgag tgttacccct gtctgtgacc 600

cacttctata gtgccaccaa gtatgccgtc actgcgctga cagagggact 650

gaggcaagag cttcgggagg cccagaccca catccgagcc acgtgcatct 700

ctccaggtgt ggtggagaca caattcgcct tcaaactcca cgacaaggac 750

cctgagaagg cagctgccac ctatgagcaa atgaagtgtc tcaaacccga 800

ggatgtggcc gaggctgtta tctacgtcct cagcacccccc gcacacatcc 850

agattggaga catccagatg aggcccacgg agcaggtgac ctagtgactg 900

tgggagctcc tccttccctc cccacccttc atggcttgcc tcctgcctct 950

ggattttagg tgttgatttc tggatcacgg gataccactt cctgtccaca 1000

ccccgaccag gggctagaaa atttgtttga gatttttata tcatcttgtc 1050

aaattgcttc agttgtaaat gtgaaaaatg ggctggggaa aggaggtggt 1100

gtccctaatt gttttacttg ttaacttgtt cttgtgcccc tgggcacttg 1150

gcctttgtct gctctcagtg tcttcccttt gacatgggaa aggagttgtg 1200

gccaaaatcc ccatcttctt gcacctcaac gtctgtggct cagggctggg 1250

gtggcagagg gaggccttca ccttatatct gtgttgttat ccagggctcc 1300

agacttcctc ctctgcctgc cccactgcac cctctccccc ttatctatct 1350

ccttctcggc tccccagccc agtcttggct tcttgtcccc tcctggggtc 1400

atccctccac tctgactctg actatggcag cagaacacca gggcctggcc 1450

cagtggattt catggtgatc attaaaaaag aaaaatcgca accaaaaaaa 1500

aaaaa 1505

<210> 128
<211> 260
<212> PRT
<213> Homo Sapien
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183

<400> 128
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Met Ala Arg Pro Gly Met Glu Arg Trp Arg Asp Arg Leu Ala Leu
 1               5                  10                  15

Val Thr Gly Ala Ser Gly Gly Ile Gly Ala Ala Val Ala Arg Ala
                20                  25                  30

Leu Val Gln Gln Gly Leu Lys Val Val Gly Cys Ala Arg Thr Val
                35                  40                  45
Gly Asn Ile Glu Glu Leu Ala Ala Glu Cys Lys Ser Ala Gly Tyr
                50                  55                  60

Pro Gly Thr Leu Ile Pro Tyr Arg Cys Asp Leu Ser Asn Glu Glu
                65                  70                  75

Asp Ile Leu Ser Met Phe Ser Ala Ile Arg Ser Gln His Ser Gly
                80                  85                  90

Val Asp Ile Cys Ile Asn Asn Ala Gly Leu Ala Arg Pro Asp Thr
                95                  100                 105

Leu Leu Ser Gly Ser Thr Ser Gly Trp Lys Asp Met Phe Asn Val
                110                 115                 120

Asn Val Leu Ala Leu Ser Ile Cys Thr Arg Glu Ala Tyr Gln Ser
                125                 130                 135

Met Lys Glu Arg Asn Val Asp Asp Gly His Ile Ile Asn Ile Asn
                140                 145                 150

Ser Met Ser Gly His Arg Val Leu Pro Leu Ser Val Thr His Phe
                155                 160                 165

Tyr Ser Ala Thr Lys Tyr Ala Val Thr Ala Leu Thr Glu Gly Leu
                170                 175                 180

Arg Gln Glu Leu Arg Glu Ala Gln Thr His Ile Arg Ala Thr Cys
                185                 190                 195

Ile Ser Pro Gly Val Val Glu Thr Gln Phe Ala Phe Lys Leu His
                200                 205                 210

Asp Lys Asp Pro Glu Lys Ala Ala Ala Thr Tyr Glu Gln Met Lys
                215                 220                 225

Cys Leu Lys Pro Glu Asp Val Ala Glu Ala Val Ile Tyr Val Leu
                230                 235                 240

Ser Thr Pro Ala His Ile Gln Ile Gly Asp Ile Gln Met Arg Pro
                245                 250                 255

Thr Glu Gln Val Thr
                260
```

<210> 129
<211> 1177
<212> DNA

184

<213> Homo Sapien

<400> 129
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aacttctaca tgggcctcct gctgctggtg ctcttcctca gcctcctgcc 50

ggtggcctac accatcatgt ccctcccacc ctcctttgac tgcgggccgt 100

tcaggtgcag agtctcagtt gcccgggagc acctcccctc ccgaggcagt 150

ctgctcagag ggcctcggcc cagaattcca gttctggttt catgccagcc 200

tgtaaaaggc catggaactt tgggtgaatc accgatgcca tttaagaggg 250
ttttctgcca ggatggaaat gttaggtcgt tctgtgtctg cgctgttcat 300

ttcagtagcc accagccacc tgtggccgtt gagtgcttga aatgaggaac 350

tgagaaaatt aatttctcat gtatttttct catttatta ttaatttta 400

actgatagtt gtacatattt gggggtacat gtgatatttg gatacatgta 450

tacaatatat aatgatcaaa tcagggtaac tgggatatcc atcacatcaa 500

acatttattt tttattcttt ttagacagag tctcactctg tcacccaggc 550

tggagtgcag tggtgccatc tcagcttact gcaacctctg cctgccaggt 600

tcaagcgatt ctcatgcctc acctcccaa gtagctggga ctacaggcat 650

gcaccacaat gcccaactaa ttttgtatt tttagtagag acggggtttt 700

gccatgttgc ccaggctggc cttgaactcc tggcctcaaa caatccactt 750

gcctcggcct cccaaagtgt tatgattaca ggcgtgagcc accgtgcctg 800

gcctaaacat ttatctttc tttgtgttgg gaactttgaa attatacaat 850

gaattattgt taactgtcat ctccctgctg tgctatggaa cactgggact 900

tcttccctct atctaactgt atatttgtac cagttaacca accgtacttc 950

atccccactc ctctctatcc ttcccaacct ctgatcacct cattctactc 1000

tctacctcca tgagatccac tttttttagct cccacatgtg agtaagaaaa 1050

tgcaatattt gtctttctgt gcctggctta tttcacttaa cataatgact 1100

tcctgttcca tccatgttgc tgcaaatgac aggatttcgt tcttaatttc 1150

aattaaaata accacacatg gcaaaaa 1177
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<210> 130
<211> 111
<212> PRT
<213> Homo Sapien

<400> 130
```
Met Gly Leu Leu Leu Leu Val Leu Phe Leu Ser Leu Leu Pro Val
```

```
        1                   5                       10                          15

     Ala Tyr Thr Ile Met Ser Leu Pro Pro Ser Phe Asp Cys Gly Pro
                     20                   25                      30

     Phe Arg Cys Arg Val Ser Val Ala Arg Glu His Leu Pro Ser Arg
                     35                   40                      45

     Gly Ser Leu Leu Arg Gly Pro Arg Pro Arg Ile Pro Val Leu Val
                     50                   55                      60

     Ser Cys Gln Pro Val Lys Gly His Gly Thr Leu Gly Glu Ser Pro
                     65                   70                      75

     Met Pro Phe Lys Arg Val·Phe Cys Gln Asp Gly Asn Val Arg Ser
                     80                   85                      90

     Phe Cys Val Cys Ala Val His Phe Ser Ser His Gln Pro Pro Val
                     95                  100                     105

     Ala Val Glu Cys Leu Lys
                    110

<210> 131
<211> 2061
<212> DNA
<213> Homo Sapien

<400> 131
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 atgatcagcg cagcctggag catcttcctc atcgggacta aaattgggct 100

 gttccttcaa gtagcacctc tatcagttat ggctaaatcc tgtccatctg 150

 tgtgtcgctg cgatgcgggt ttcatttact gtaatgatcg ctttctgaca 200

 tccattccaa caggaatacc agaggatgct acaactctct accttcagaa 250

 caaccaaata aataatgctg ggattccttc agatttgaaa aacttgctga 300

 aagtagaaag aatataccta taccacaaca gtttagatga atttcctacc 350

 aacctcccaa agtatgtaaa agagttacat ttgcaagaaa ataacataag 400

 gactatcact tatgattcac tttcaaaaat tccctatctg gaagaattac 450

 atttagatga caactctgtc tctgcagtta gcatagaaga gggagcattc 500

 cgagacagca actatctccg actgcttttc ctgtcccgta atcaccttag 550

 cacaattccc tggggtttgc ccaggactat agaagaacta cgcttggatg 600

 ataatcgcat atccactatt tcatcaccat ctcttcaagg tctcactagt 650

 ctaaaacgcc tggttctaga tggaaacctg ttgaacaatc atggtttagg 700
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tgacaaagtt ttcttcaacc tagttaattt gacagagctg tccctggtgc 750

ggaattccct gactgctgca ccagtaaacc ttccaggcac aaacctgagg 800

aagctttatc ttcaagataa ccacatcaat cgggtgcccc caaatgcttt 850

ttcttatcta aggcagctct atcgactgga tatgtccaat aataacctaa 900

gtaatttacc tcagggtatc tttgatgatt tggacaatat aacacaactg 950

attcttcgca acaatccctg gtattgcggg tgcaagatga aatgggtacg 1000

tgactggtta caatcactac ctgtgaaggt caacgtgcgt gggctcatgt 1050

gccaagcccc agaaaaggtt cgtgggatgg ctattaagga tctcaatgca 1100

gaactgtttg attgtaagga cagtgggatt gtaagcacca ttcagataac 1150

cactgcaata cccaacacag tgtatcctgc ccaaggacag tggccagctc 1200

cagtgaccaa acagccagat attaagaacc ccaagctcac taaggatcaa 1250

caaaccacag ggagtccctc aagaaaaaca attacaatta ctgtgaagtc 1300

tgtcacctct gataccattc atatctcttg gaaacttgct ctacctatga 1350

ctgctttgag actcagctgg cttaaactgg gccatagccc ggcatttgga 1400

tctataacag aaacaattgt aacaggggaa cgcagtgagt acttggtcac 1450

agccctggag cctgattcac cctataaagt atgcatggtt cccatggaaa 1500

ccagcaacct ctacctattt gatgaaactc ctgtttgtat tgagactgaa 1550

actgcacccc ttcgaatgta caaccctaca accaccctca atcgagagca 1600

agagaaagaa ccttacaaaa accccaattt acctttggct gccatcattg 1650

gtgggggctgt ggccctggtt accattgccc ttcttgcttt agtgtgttgg 1700

tatgttcata ggaatggatc gctcttctca aggaactgtg catatagcaa 1750

agggaggaga agaaaggatg actatgcaga agctggcact aagaaggaca 1800

actctatcct ggaaatcagg gaaacttctt ttcagatgtt accaataagc 1850

aatgaaccca tctcgaagga ggagtttgta atacacacca tatttcctcc 1900

taatggaatg aatctgtaca aaaacaatca cagtgaaagc agtagtaacc 1950

gaagctacag agacagtggt attccagact cagatcactc acactcatga 2000

tgctgaagga ctcacagcag acttgtgttt tgggtttttt aaacctaagg 2050

gaggtgatgg t 2061

<210> 132

<211> 649
<212> PRT
<213> Homo Sapien

<400> 132
```
Met Ile Ser Ala Ala Trp Ser Ile Phe Leu Ile Gly Thr Lys Ile
 1               5                  10                  15

Gly Leu Phe Leu Gln Val Ala Pro Leu Ser Val Met Ala Lys Ser
                 20                  25                  30

Cys Pro Ser Val Cys Arg Cys Asp Ala Gly Phe Ile Tyr Cys Asn
                 35                  40                  45

Asp Arg Phe Leu Thr Ser Ile Pro Thr Gly Ile Pro Glu Asp Ala
                 50                  55                  60

Thr Thr Leu Tyr Leu Gln Asn Asn Gln Ile Asn Asn Ala Gly Ile
                 65                  70                  75

Pro Ser Asp Leu Lys Asn Leu Leu Lys Val Glu Arg Ile Tyr Leu
                 80                  85                  90

Tyr His Asn Ser Leu Asp Glu Phe Pro Thr Asn Leu Pro Lys Tyr
                 95                  100                 105

Val Lys Glu Leu His Leu Gln Glu Asn Asn Ile Arg Thr Ile Thr
                 110                 115                 120

Tyr Asp Ser Leu Ser Lys Ile Pro Tyr Leu Glu Glu Leu His Leu
                 125                 130                 135

Asp Asp Asn Ser Val Ser Ala Val Ser Ile Glu Glu Gly Ala Phe
                 140                 145                 150

Arg Asp Ser Asn Tyr Leu Arg Leu Leu Phe Leu Ser Arg Asn His
                 155                 160                 165

Leu Ser Thr Ile Pro Trp Gly Leu Pro Arg Thr Ile Glu Glu Leu
                 170                 175                 180

Arg Leu Asp Asp Asn Arg Ile Ser Thr Ile Ser Ser Pro Ser Leu
                 185                 190                 195

Gln Gly Leu Thr Ser Leu Lys Arg Leu Val Leu Asp Gly Asn Leu
                 200                 205                 210

Leu Asn Asn His Gly Leu Gly Asp Lys Val Phe Phe Asn Leu Val
                 215                 220                 225

Asn Leu Thr Glu Leu Ser Leu Val Arg Asn Ser Leu Thr Ala Ala
                 230                 235                 240

Pro Val Asn Leu Pro Gly Thr Asn Leu Arg Lys Leu Tyr Leu Gln
                 245                 250                 255

Asp Asn His Ile Asn Arg Val Pro Pro Asn Ala Phe Ser Tyr Leu
```

```
              260                    265                    270
Arg Gln Leu Tyr Arg Leu Asp Met Ser Asn Asn Asn Leu Ser Asn
              275                    280                    285
Leu Pro Gln Gly Ile Phe Asp Asp Leu Asp Asn Ile Thr Gln Leu
              290                    295                    300
Ile Leu Arg Asn Asn Pro Trp Tyr Cys Gly Cys Lys Met Lys Trp
              305                    310                    315
Val Arg Asp Trp Leu Gln Ser Leu Pro Val Lys Val Asn Val Arg
              320                    325                    330
Gly Leu Met Cys Gln Ala Pro Glu Lys Val Arg Gly Met Ala Ile
              335                    340                    345
Lys Asp Leu Asn Ala Glu Leu Phe Asp Cys Lys Asp Ser Gly Ile
              350                    355                    360
Val Ser Thr Ile Gln Ile Thr Thr Ala Ile Pro Asn Thr Val Tyr
              365                    370                    375
Pro Ala Gln Gly Gln Trp Pro Ala Pro Val Thr Lys Gln Pro Asp
              380                    385                    390
Ile Lys Asn Pro Lys Leu Thr Lys Asp Gln Gln Thr Thr Gly Ser
              395                    400                    405
Pro Ser Arg Lys Thr Ile Thr Ile Thr Val Lys Ser Val Thr Ser
              410                    415                    420
Asp Thr Ile His Ile Ser Trp Lys Leu Ala Leu Pro Met Thr Ala
              425                    430                    435
Leu Arg Leu Ser Trp Leu Lys Leu Gly His Ser Pro Ala Phe Gly
              440                    445                    450
Ser Ile Thr Glu Thr Ile Val Thr Gly Glu Arg Ser Glu Tyr Leu
              455                    460                    465
Val Thr Ala Leu Glu Pro Asp Ser Pro Tyr Lys Val Cys Met Val
              470                    475                    480
Pro Met Glu Thr Ser Asn Leu Tyr Leu Phe Asp Glu Thr Pro Val
              485                    490                    495
Cys Ile Glu Thr Glu Thr Ala Pro Leu Arg Met Tyr Asn Pro Thr
              500                    505                    510
Thr Thr Leu Asn Arg Glu Gln Glu Lys Glu Pro Tyr Lys Asn Pro
              515                    520                    525
Asn Leu Pro Leu Ala Ala Ile Ile Gly Gly Ala Val Ala Leu Val
              530                    535                    540
Thr Ile Ala Leu Leu Ala Leu Val Cys Trp Tyr Val His Arg Asn
```

```
                545                  550                  555

Gly Ser Leu Phe Ser Arg Asn Cys Ala Tyr Ser Lys Gly Arg Arg
                560                  565                  570

Arg Lys Asp Asp Tyr Ala Glu Ala Gly Thr Lys Lys Asp Asn Ser
                575                  580                  585

Ile Leu Glu Ile Arg Glu Thr Ser Phe Gln Met Leu Pro Ile Ser
                590        .         595                  600

Asn Glu Pro Ile Ser Lys Glu Glu Phe Val Ile His Thr Ile Phe
                605                  610                  615

Pro Pro Asn Gly Met Asn Leu Tyr Lys Asn Asn His Ser Glu Ser
                620                  625                  630

Ser Ser Asn Arg Ser Tyr Arg Asp Ser Gly Ile Pro Asp Ser Asp
                635                  640                  645

His Ser His Ser


<210> 133
<211> 1882
<212> DNA
<213> Homo Sapien
<400> 133
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 ccaggcttct tggcagccct gccgggccac ttgtcttcat gtctgccagg 100

 gggaggtggg aaggaggtgg gaggagggcg tgcagaggca gtctgggctt 150

 ggccagagct cagggtgctg agcgtgtgac cagcagtgag cagaggccgg 200

 ccatggccag cctggggctg ctgctcctgc tcttactgac agcactgcca 250

 ccgctgtggt cctcctcact gcctgggctg gacactgctg aaagtaaagc 300

 caccattgca gacctgatcc tgtctgcgct ggagagagcc accgtcttcc 350

 tagaacagag gctgcctgaa atcaacctgg atggcatggt gggggtccga 400

 gtgctggaag agcagctaaa aagtgtccgg gagaagtggg cccaggagcc 450

 cctgctgcag ccgctgagcc tgcgcgtggg gatgctgggg gagaagctgg 500

 aggctgccat ccagagatcc ctccactacc tcaagctgag tgatcccaag 550

 tacctaagag agttccagct gaccctccag cccgggtttt ggaagctccc 600

 acatgcctgg atccacactg atgcctcctt ggtgtacccc acgttcgggc 650

 cccaggactc attctcagag gagagaagtg acgtgtgcct ggtgcagctg 700

 ctgggaaccg ggacggacag cagcgagccc tgcggcctct cagacctctg 750
```

caggagcctc atgaccaagc ccggctgctc aggctactgc ctgtcccacc 800

aactgctctt cttcctctgg gccagaatga ggggatgcac acagggacca 850

ctccaacaga gccaggacta tatcaacctc ttctgcgcca acatgatgga 900

cttgaaccgc agagctgagg ccatcggata cgcctaccct acccgggaca 950

tcttcatgga aaacatcatg ttctgtggaa tgggcggctt ctccgacttc 1000

tacaagctcc ggtggctgga ggccattctc agctggcaga acagcagga 1050

aggatgcttc ggggagcctg atgctgaaga tgaagaatta tctaaagcta 1100

ttcaatatca gcagcatttt tcgaggagag tgaagaggcg agaaaaacaa 1150

tttccagatt ctcgctctgt tgctcaggct ggagtacagt ggcgcaatct 1200

cggctcactg caacctttgc ctcctgggtt caagcaattc tcttgcctca 1250

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ttttatattt ttttagtaga gacagggttt catcatgttg ctcatgctgg 1350

tctcgaactc ctgatctcaa gagatccgcc cacctcaggc tcccaaagtg 1400

tgggattata ggtgtgagcc accgtgtctg gctgaaaagc actttcaaag 1450

agactgtgtt gaataaaggg ccaaggttct tgccacccag cactcatggg 1500
ggctctctcc cctagatggc tgctcctccc acaacacagc cacagcagtg 1550

gcagccctgg gtggcttcct atacatcctg gcagaatacc ccccagcaaa 1600

cagagagcca cacccatcca caccgccacc accaagcagc cgctgagacg 1650

gacggttcca tgccagctgc ctggaggagg aacagacccc tttagtcctc 1700

atcccttaga tcctggaggg cacggatcac atcctgggaa gaaggcatct 1750

ggaggataag caaagccacc ccgacaccca atcttggaag ccctgagtag 1800

gcagggccag ggtaggtggg ggccgggagg gacccaggtg tgaacggatg 1850

aataaagttc aactgcaact gaaaaaaaaa aa 1882

<210> 134
<211> 440
<212> PRT
<213> Homo Sapien

<400> 134
 Met Ser Ala Arg Gly Arg Trp Glu Gly Gly Gly Arg Arg Ala Cys
  1   5   10   15

 Arg Gly Ser Leu Gly Leu Ala Arg Ala Gln Gly Ala Glu Arg Val
                 20   25   30

191

```
Thr Ser Ser Glu Gln Arg Pro Ala Met Ala Ser Leu Gly Leu Leu
              35                  40                  45

Leu Leu Leu Leu Leu Thr Ala Leu Pro Pro Leu Trp Ser Ser Ser
              50                  55                  60

Leu Pro Gly Leu Asp Thr Ala Glu Ser Lys Ala Thr Ile Ala Asp
              65                  70                  75

Leu Ile Leu Ser Ala Leu Glu Arg Ala Thr Val Phe Leu Glu Gln
              80                  85                  90

Arg Leu Pro Glu Ile Asn Leu Asp Gly Met Val Gly Val Arg Val
              95                  100                 105

Leu Glu Glu Gln Leu Lys Ser Val Arg Glu Lys Trp Ala Gln Glu
              110                 115                 120

Pro Leu Leu Gln Pro Leu Ser Leu Arg Val Gly Met Leu Gly Glu
              125                 130                 135

Lys Leu Glu Ala Ala Ile Gln Arg Ser Leu His Tyr Leu Lys Leu
              140                 145                 150

Ser Asp Pro Lys Tyr Leu Arg Glu Phe Gln Leu Thr Leu Gln Pro
              155                 160                 165

Gly Phe Trp Lys Leu Pro His Ala Trp Ile His Thr Asp Ala Ser
              170                 175                 180

Leu Val Tyr Pro Thr Phe Gly Pro Gln Asp Ser Phe Ser Glu Glu
              185                 190                 195
Arg Ser Asp Val Cys Leu Val Gln Leu Leu Gly Thr Gly Thr Asp
              200                 205                 210

Ser Ser Glu Pro Cys Gly Leu Ser Asp Leu Cys Arg Ser Leu Met
              215                 220                 225

Thr Lys Pro Gly Cys Ser Gly Tyr Cys Leu Ser His Gln Leu Leu
              230                 235                 240

Phe Phe Leu Trp Ala Arg Met Arg Gly Cys Thr Gln Gly Pro Leu
              245                 250                 255

Gln Gln Ser Gln Asp Tyr Ile Asn Leu Phe Cys Ala Asn Met Met
              260                 265                 270

Asp Leu Asn Arg Arg Ala Glu Ala Ile Gly Tyr Ala Tyr Pro Thr
              275                 280                 285

Arg Asp Ile Phe Met Glu Asn Ile Met Phe Cys Gly Met Gly Gly
              290                 295                 300

Phe Ser Asp Phe Tyr Lys Leu Arg Trp Leu Glu Ala Ile Leu Ser
              305                 310                 315
```

192

```
Trp Gln Lys Gln Gln Glu Gly Cys Phe Gly Glu Pro Asp Ala Glu
                320                 325                 330

Asp Glu Glu Leu Ser Lys Ala Ile Gln Tyr Gln Gln His Phe Ser
                335                 340                 345

Arg Arg Val Lys Arg Arg Glu Lys Gln Phe Pro Asp Ser Arg Ser
                350                 355                 360

Val Ala Gln Ala Gly Val Gln Trp Arg Asn Leu Gly Ser Leu Gln
                365                 370                 375

Pro Leu Pro Pro Gly Phe Lys Gln Phe Ser Cys Leu Ile Leu Pro
                380                 385                 390

Ser Ser Trp Asp Tyr Arg Ser Val Pro Pro Tyr Leu Ala Asn Phe
                395                 400                 405

Tyr Ile Phe Leu Val Glu Thr Gly Phe His His Val Ala His Ala
                410                 415                 420

Gly Leu Glu Leu Leu Ile Ser Arg Asp Pro Pro Thr Ser Gly Ser
                425                 430                 435

Gln Ser Val Gly Leu
                440

<210> 135
<211> 884
<212> DNA
<213> Homo Sapien

<400> 135
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 cccgtcctgc tgctgctgct gctatcgggg gatgtccaga gctcggaggt 100
 gcccgggggct gctgctgagg gatcgggagg gagtggggtc ggcataggag 150

 atcgcttcaa gattgagggg cgtgcagttg ttccaggggt gaagcctcag 200

 gactggatct cggcggcccg agtgctggta gacggagaag agcacgtcgg 250

 tttccttaag acagatggga gttttgtggt tcatgatata ccttctggat 300

 cttatgtagt ggaagttgta tctccagctt acagatttga tcccgttcga 350

 gtggatatca cttcgaaagg aaaaatgaga gcaagatatg tgaattacat 400

 caaaacatca gaggttgtca gactgcccta tcctctccaa atgaaatctt 450

 caggtccacc ttcttacttt attaaaaggg aatcgtgggg ctggacagac 500

 tttctaatga acccaatggt tatgatgatg gttcttcctt tattgatatt 550

 tgtgcttctg cctaaagtgg tcaacacaag tgatcctgac atgagacggg 600

 aaatggagca gtcaatgaat atgctgaatt ccaaccatga gttgcctgat 650
```

193

```
gtttctgagt tcatgacaag actcttctct tcaaaatcat ctggcaaatc 700

tagcagcggc agcagtaaaa caggcaaaag tggggctggc aaaaggaggt 750

agtcaggccg tccagagctg gcatttgcac aaacacggca acactgggtg 800

gcatccaagt cttggaaaac cgtgtgaagc aactactata aacttgagtc 850

atcccgacgt tgatctctta caactgtgta tgtt 884
```

<210> 136
<211> 242
<212> PRT
<213> Homo Sapien

<400> 136

```
Met Ala Ala Ala Leu Trp Gly Phe Phe Pro Val Leu Leu Leu Leu
 1               5                  10                  15

Leu Leu Ser Gly Asp Val Gln Ser Ser Glu Val Pro Gly Ala Ala
                20                  25                  30

Ala Glu Gly Ser Gly Gly Ser Gly Val Gly Ile Gly Asp Arg Phe
                35                  40                  45

Lys Ile Glu Gly Arg Ala Val Val Pro Gly Val Lys Pro Gln Asp
                50                  55                  60

Trp Ile Ser Ala Ala Arg Val Leu Val Asp Gly Glu Glu His Val
                65                  70                  75

Gly Phe Leu Lys Thr Asp Gly Ser Phe Val Val His Asp Ile Pro
                80                  85                  90

Ser Gly Ser Tyr Val Val Glu Val Val Ser Pro Ala Tyr Arg Phe
                95                  100                 105

Asp Pro Val Arg Val Asp Ile Thr Ser Lys Gly Lys Met Arg Ala
                110                 115                 120

Arg Tyr Val Asn Tyr Ile Lys Thr Ser Glu Val Val Arg Leu Pro
                125                 130                 135

Tyr Pro Leu Gln Met Lys Ser Ser Gly Pro Pro Ser Tyr Phe Ile
                140                 145                 150

Lys Arg Glu Ser Trp Gly Trp Thr Asp Phe Leu Met Asn Pro Met
                155                 160                 165

Val Met Met Met Val Leu Pro Leu Leu Ile Phe Val Leu Leu Pro
                170                 175                 180

Lys Val Val Asn Thr Ser Asp Pro Asp Met Arg Arg Glu Met Glu
                185                 190                 195

Gln Ser Met Asn Met Leu Asn Ser Asn His Glu Leu Pro Asp Val
```

194

```
         200                 205                 210

 Ser Glu Phe Met Thr Arg Leu Phe Ser Ser Lys Ser Ser Gly Lys
                 215                 220                 225

 Ser Ser Ser Gly Ser Ser Lys Thr Gly Lys Ser Gly Ala Gly Lys
                 230                 235                 240

 Arg Arg


<210> 137
<211> 1571
<212> DNA
<213> Homo Sapien

<400> 137
 gatggcgcag ccacagcttc tgtgagattc gatttctccc cagttcccct 50

 gtgggtctga ggggaccaga agggtgagct acgttggctt tctggaaggg 100

 gaggctatat gcgtcaattc cccaaaacaa gttttgacat ttcccctgaa 150

 atgtcattct ctatctattc actgcaagtg cctgctgttc caggccttac 200

 ctgctgggca ctaacggcgg agccaggatg gggacagaat aaaggagcca 250

 cgacctgtgc caccaactcg cactcagact ctgaactcag acctgaaatc 300

 ttctcttcac gggaggcttg gcagtttttc ttactcctgt ggtctccaga 350

 tttcaggcct aagatgaaag cctctagtct tgccttcagc cttctctctg 400

 ctgcgtttta tctcctatgg actccttcca ctggactgaa gacactcaat 450

 ttgggaagct gtgtgatcgc cacaaacctt caggaaatac gaaatggatt 500

 ttctgagata cggggcagtg tgcaagccaa agatggaaac attgacatca 550

 gaatcttaag gaggactgag tctttgcaag acacaaagcc tgcgaatcga 600

 tgctgcctcc tgcgccattt gctaagactc tatctggaca gggtatttaa 650
 aaactaccag acccctgacc attatactct ccggaagatc agcagcctcg 700

 ccaattcctt tcttaccatc aagaaggacc tccggctctc tcatgcccac 750

 atgacatgcc attgtgggga ggaagcaatg aagaaataca gccagattct 800

 gagtcacttt gaaaagctgg aacctcaggc agcagttgtg aaggctttgg 850

 gggaactaga cattcttctg caatggatgg aggagacaga ataggaggaa 900

 agtgatgctg ctgctaagaa tattcgaggt caagagctcc agtcttcaat 950

 acctgcagag gaggcatgac cccaaaccac catctcttta ctgtactagt 1000

 cttgtgctgg tcacagtgta tcttatttat gcattacttg cttccttgca 1050
```

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tgattgtctt tatgcatccc caatcttaat tgagaccata cttgtataag 1100

attttttgtaa tatctttctg ctattggata tatttattag ttaatatatt 1150

tatttatttt ttgctattta atgtatttat ttttttactt ggacatgaaa 1200

ctttaaaaaa attcacagat tatatttata acctgactag agcaggtgat 1250

gtatttttat acagtaaaaa aaaaaaacct tgtaaattct agaagagtgg 1300

ctagggggt tattcatttg tattcaacta aggacatatt tactcatgct 1350

gatgctctgt gagatatttg aaattgaacc aatgactact taggatgggt 1400

tgtggaataa gttttgatgt ggaattgcac atctacctta caattactga 1450

ccatccccag tagactcccc agtcccataa ttgtgtatct tccagccagg 1500

aatcctacac ggccagcatg tatttctaca aataaagttt tctttgcata 1550

ccaaaaaaaa aaaaaaaaa a 1571
```

<210> 138
<211> 261
<212> PRT
<213> Homo Sapien

<400> 138

```
Met Arg Gln Phe Pro Lys Thr Ser Phe Asp Ile Ser Pro Glu Met
 1               5                  10                  15

Ser Phe Ser Ile Tyr Ser Leu Gln Val Pro Ala Val Pro Gly Leu
                20                  25                  30

Thr Cys Trp Ala Leu Thr Ala Glu Pro Gly Trp Gly Gln Asn Lys
                35                  40                  45

Gly Ala Thr Thr Cys Ala Thr Asn Ser His Ser Asp Ser Glu Leu
                50                  55                  60

Arg Pro Glu Ile Phe Ser Ser Arg Glu Ala Trp Gln Phe Phe Leu
                65                  70                  75

Leu Leu Trp Ser Pro Asp Phe Arg Pro Lys Met Lys Ala Ser Ser
                80                  85                  90

Leu Ala Phe Ser Leu Leu Ser Ala Ala Phe Tyr Leu Leu Trp Thr
                95                  100                 105

Pro Ser Thr Gly Leu Lys Thr Leu Asn Leu Gly Ser Cys Val Ile
                110                 115                 120

Ala Thr Asn Leu Gln Glu Ile Arg Asn Gly Phe Ser Glu Ile Arg
                125                 130                 135

Gly Ser Val Gln Ala Lys Asp Gly Asn Ile Asp Ile Arg Ile Leu
```

196

Arg Arg Thr Glu Ser Leu Gln Asp Thr Lys Pro Ala Asn Arg Cys
                155   160   165

Cys Leu Leu Arg His Leu Leu Arg Leu Tyr Leu Asp Arg Val Phe
                170   175   180

Lys Asn Tyr Gln Thr Pro Asp His Tyr Thr Leu Arg Lys Ile Ser
                185   190   195

Ser Leu Ala Asn Ser Phe Leu Thr Ile Lys Lys Asp Leu Arg Leu
                200   205   210

Ser His Ala His Met Thr Cys His Cys Gly Glu Glu Ala Met Lys
                215   220   225

Lys Tyr Ser Gln Ile Leu Ser His Phe Glu Lys Leu Glu Pro Gln
                230   235   240

Ala Ala Val Val Lys Ala Leu Gly Glu Leu Asp Ile Leu Leu Gln
                245   250   255

Trp Met Glu Glu Thr Glu
                260

<210> 139
<211> 2395
<212> DNA
<213> Homo Sapien

<400> 139
 cctggagccg gaagcgcggc tgcagcaggg cgaggctcca ggtggggtcg 50

 gttccgcatc cagcctagcg tgtccacgat gcggctgggc tccgggactt 100

 tcgctacctg ttgcgtagcg atcgaggtgc tagggatcgc ggtcttcctt 150

 cggggattct tcccggctcc cgttcgttcc tctgccagag cggaacacgg 200

 agcggagccc ccagcgcccg aaccctcggc tggagccagt tctaactgga 250

 ccacgctgcc accacctctc ttcagtaaag ttgttattgt tctgatagat 300

 gccttgagag atgattttgt gtttgggtca aagggtgtga aatttatgcc 350

 ctacacaact taccttgtgg aaaaaggagc atctcacagt tttgtggctg 400

 aagcaaagcc acctacagtt actatgcctc gaatcaaggc attgatgacg 450

 gggagccttc ctggctttgt cgacgtcatc aggaacctca attctcctgc 500

 actgctggaa gacagtgtga taagacaagc aaaagcagct ggaaaaagaa 550

 tagtctttta tggagatgaa acctgggtta aattattccc aaagcatttt 600

 gtggaatatg atggaacaac ctcatttttc gtgtcagatt acacagaggt 650

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ggataataat gtcacgaggc atttggataa agtattaaaa agaggagatt 700

gggacatatt aatcctccac tacctggggc tggaccacat tggccacatt 750

tcagggccca acagcccct gattgggcag aagctgagcg agatggacag 800

cgtgctgatg aagatccaca cctcactgca gtcgaaggag agagagacgc 850

ctttacccaa tttgctggtt ctttgtggtg accatggcat gtctgaaaca 900

ggaagtcacg gggcctcctc caccgaggag gtgaatacac ctctgatttt 950

aatcagttct gcgtttgaaa ggaaacccgg tgatatccga catccaaagc 1000

acgtccaata gacggatgtg gctgcgacac tggcgatagc acttggctta 1050

ccgattccaa aagacagtgt agggagcctc ctattcccag ttgtggaagg 1100

aagaccaatg agagagcagt tgagattttt acatttgaat acagtgcagc 1150

ttagtaaact gttgcaagag aatgtgccgt catatgaaaa agatcctggg 1200

tttgagcagt ttaaaatgtc agaaagattg catgggaact ggatcagact 1250

gtacttggag gaaaagcatt cagaagtcct attcaacctg ggctccaagg 1300

ttctcaggca gtacctggat gctctgaaga cgctgagctt gtccctgagt 1350

gcacaagtgg cccagttctc accctgctcc tgctcagcgt cccacaggca 1400

ctgcacagaa aggctgagct ggaagtccca ctgtcatctc ctgggttttc 1450

tctgctcttt tatttggtga tcctggttct ttcggccgtt cacgtcattg 1500

tgtgcacctc agctgaaagt tcgtgctact tctgtggcct ctcgtggctg 1550

gcggcaggct gcctttcgtt taccagactc tggttgaaca cctggtgtgt 1600

gccaagtgct ggcagtgccc tggacagggg gcctcaggga aggacgtgga 1650

gcagccttat cccaggcctc tgggtgtccc gacacaggtg ttcacatctg 1700

tgctgtcagg tcagatgcct cagttcttgg aaagctaggt tcctgcgact 1750

gttaccaagg tgattgtaaa gagctggcgg tcacagagga acaagccccc 1800

cagctgaggg ggtgtgtgaa tcggacagcc tcccagcaga ggtgtgggag 1850

ctgcagctga gggaagaaga gacaatcggc ctggacactc aggagggtca 1900

aaaggagact tggtcgcacc actcatcctg ccaccccag aatgcatcct 1950

gcctcatcag gtccagattt ctttccaagg cggacgtttt ctgttggaat 2000

tcttagtcct tggcctcgga caccttcatt cgttagctgg ggagtggtgg 2050
```

```
tgaggcagtg aagaagaggc ggatggtcac actcagatcc acagagccca 2100

ggatcaaggg acccactgca gtggcagcag gactgttggg cccccacccc 2150

aaccctgcac agccctcatc ccctcttggc ttgagccgtc agaggccctg 2200

tgctgagtgt ctgaccgaga cactcacagc tttgtcatca gggcacaggc 2250

ttcctcggag ccaggatgat ctgtgccacg cttgcacctc gggcccatct 2300

gggctcatgc tctctctcct gctattgaat tagtacctag ctgcacacag 2350

tatgtagtta ccaaaagaat aaacggcaat aattgagaaa aaaaa 2395
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<210> 140
<211> 310
<212> PRT
<213> Homo Sapien

<400> 140
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Met Arg Leu Gly Ser Gly Thr Phe Ala Thr Cys Cys Val Ala Ile
 1               5                   10                  15

Glu Val Leu Gly Ile Ala Val Phe Leu Arg Gly Phe Phe Pro Ala
                20                  25                  30

Pro Val Arg Ser Ser Ala Arg Ala Glu His Gly Ala Glu Pro Pro
                35                  40                  45

Ala Pro Glu Pro Ser Ala Gly Ala Ser Ser Asn Trp Thr Thr Leu
                50                  55                  60

Pro Pro Pro Leu Phe Ser Lys Val Val Ile Val Leu Ile Asp Ala
                65                  70                  75

Leu Arg Asp Asp Phe Val Phe Gly Ser Lys Gly Val Lys Phe Met
                80                  85                  90

Pro Tyr Thr Thr Tyr Leu Val Glu Lys Gly Ala Ser His Ser Phe
                95                  100                 105

Val Ala Glu Ala Lys Pro Pro Thr Val Thr Met Pro Arg Ile Lys
                110                 115                 120

Ala Leu Met Thr Gly Ser Leu Pro Gly Phe Val Asp Val Ile Arg
                125                 130                 135

Asn Leu Asn Ser Pro Ala Leu Leu Glu Asp Ser Val Ile Arg Gln
                140                 145                 150

Ala Lys Ala Ala Gly Lys Arg Ile Val Phe Tyr Gly Asp Glu Thr
                155                 160                 165

Trp Val Lys Leu Phe Pro Lys His Phe Val Glu Tyr Asp Gly Thr
                170                 175                 180

Thr Ser Phe Phe Val Ser Asp Tyr Thr Glu Val Asp Asn Asn Val
```

199

```
                185                  190                  195
Thr Arg His Leu Asp Lys Val Leu Lys Arg Gly Asp Trp Asp Ile
            200                  205                  210

Leu Ile Leu His Tyr Leu Gly Leu Asp His Ile Gly His Ile Ser
            215                  220                  225

Gly Pro Asn Ser Pro Leu Ile Gly Gln Lys Leu Ser Glu Met Asp
            230                  235                  240

Ser Val Leu Met Lys Ile His Thr Ser Leu Gln Ser Lys Glu Arg
            245                  250                  255

Glu Thr Pro Leu Pro Asn Leu Leu Val Leu Cys Gly Asp His Gly
            260                  265                  270

Met Ser Glu Thr Gly Ser His Gly Ala Ser Ser Thr Glu Glu Val
            275                  280                  285

Asn Thr Pro Leu Ile Leu Ile Ser Ser Ala Phe Glu Arg Lys Pro
            290                  295                  300

Gly Asp Ile Arg His Pro Lys His Val Gln
            305                  310
```

<210> 141
<211> 754
<212> DNA
<213> Homo Sapien

<400> 141
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 ggcacgaggc aagccttcca ggttatcgtg acgcaccttg aaagtctgag 50

 agctactgcc ctacagaaag ttactagtgc cctaaagctg gcgctggcac 100

 tgatgttact gctgctgttg gagtacaact ccctataga aaacaactgc 150

 cagcacctta agaccactca caccttcaga gtgaagaact taaacccgaa 200

 gaaattcagc attcatgacc aggatcacaa agtactggtc ctggactctg 250

 ggaatctcat agcagttcca gataaaaact acatacgccc agagatcttc 300

 tttgcattag cctcatcctt gagctcagcc tctgcggaga aaggaagtcc 350

 gattctcctg ggggtctcta aaggggagtt ttgtctctac tgtgacaagg 400

 ataaaggaca aagtcatcca tcccttcagc tgaagaagga gaaactgatg 450

 aagctggctg cccaaaagga atcagcacgc cggcccttca tcttttatag 500

 ggctcaggtg ggctcctgga acatgctgga gtcggcggct caccccggat 550

 ggttcatctg cacctcctgc aattgtaatg agcctgttgg ggtgacagat 600

 aaatttgaga acaggaaaca cattgaattt tcatttcaac cagtttgcaa 650
```

agctgaaatg agccccagtg aggtcagcga ttaggaaact gccccattga 700

acgccttcct cgctaatttg aactaattgt ataaaaacac caaacctgct 750

cact 754

<210> 142
<211> 193
<212> PRT
<213> Homo Sapien

<400> 142

```
Met Leu Leu Leu Leu Leu Glu Tyr Asn Phe Pro Ile Glu Asn Asn
 1               5                  10                  15

Cys Gln His Leu Lys Thr Thr His Thr Phe Arg Val Lys Asn Leu
                20                  25                  30

Asn Pro Lys Lys Phe Ser Ile His Asp Gln Asp His Lys Val Leu
                35                  40                  45

Val Leu Asp Ser Gly Asn Leu Ile Ala Val Pro Asp Lys Asn Tyr
                50                  55                  60

Ile Arg Pro Glu Ile Phe Phe Ala Leu Ala Ser Ser Leu Ser Ser
                65                  70                  75

Ala Ser Ala Glu Lys Gly Ser Pro Ile Leu Leu Gly Val Ser Lys
                80                  85                  90

Gly Glu Phe Cys Leu Tyr Cys Asp Lys Asp Lys Gly Gln Ser His
                95                  100                 105

Pro Ser Leu Gln Leu Lys Lys Glu Lys Leu Met Lys Leu Ala Ala
                110                 115                 120

Gln Lys Glu Ser Ala Arg Arg Pro Phe Ile Phe Tyr Arg Ala Gln
                125                 130                 135

Val Gly Ser Trp Asn Met Leu Glu Ser Ala Ala His Pro Gly Trp
                140                 145                 150

Phe Ile Cys Thr Ser Cys Asn Cys Asn Glu Pro Val Gly Val Thr
                155                 160                 165

Asp Lys Phe Glu Asn Arg Lys His Ile Glu Phe Ser Phe Gln Pro
                170                 175                 180

Val Cys Lys Ala Glu Met Ser Pro Ser Glu Val Ser Asp
                185                 190
```

<210> 143
<211> 961
<212> DNA
<213> Homo Sapien

<400> 143

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ctagagagta tagggcagaa ggatggcaga tgagtgactc cacatccaga 50

gctgcctccc tttaatccag gatcctgtcc ttcctgtcct gtaggagtgc 100
ctgttgccag tgtggggtga gacaagtttg tcccacaggg ctgtctgagc 150

agataagatt aagggctggg tctgtgctca attaactcct gtgggcacgg 200

gggctgggaa gagcaaagtc agcggtgcct acagtcagca ccatgctggg 250

cctgccgtgg aagggaggtc tgtcctgggc gctgctgctg cttctcttag 300

gctcccagat cctgctgatc tatgcctggc atttccacga gcaaagggac 350

tgtgatgaac acaatgtcat ggctcgttac ctccctgcca cagtggagtt 400

tgctgtccac acattcaacc aacagagcaa ggactactat gcctacagac 450

tggggcacat cttgaattcc tggaaggagc aggtggagtc caagactgta 500

ttctcaatgg agctactgct ggggagaact aggtgtggga aatttgaaga 550

cgacattgac aactgccatt ccaagaaag cacagagctg aacaatactt 600

tcacctgctt cttcaccatc agcaccaggc cctggatgac tcagttcagc 650

ctcctgaaca agacctgctt ggagggattc cactgagtga aacccactca 700

caggcttgtc catgtgctgc tcccacattc cgtggacatc agcactactc 750

tcctgaggac tcttcagtgg ctgagcagct ttggacttgt ttgttatcct 800

attttgcatg tgtttgagat ctcagatcag tgttttagaa aatccacaca 850

tcttgagcct aatcatgtag tgtagatcat taaacatcag cattttaaga 900

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 950

aaaaaaaaaa a 961
```

<210> 144
<211> 147
<212> PRT
<213> Homo Sapien

<400> 144

```
Met Leu Gly Leu Pro Trp Lys Gly Gly Leu Ser Trp Ala Leu Leu
 1               5                  10                  15


Leu Leu Leu Leu Gly Ser Gln Ile Leu Leu Ile Tyr Ala Trp His
                20                  25                  30


Phe His Glu Gln Arg Asp Cys Asp Glu His Asn Val Met Ala Arg
                35                  40                  45


Tyr Leu Pro Ala Thr Val Glu Phe Ala Val His Thr Phe Asn Gln
                50                  55                  60
```

```
Gln Ser Lys Asp Tyr Tyr Ala Tyr Arg Leu Gly His Ile Leu Asn
                65                  70                      75

Ser Trp Lys Glu Gln Val Glu Ser Lys Thr Val Phe Ser Met Glu
                80                  85                      90

Leu Leu Leu Gly Arg Thr Arg Cys Gly Lys Phe Glu Asp Asp Ile
                95                  100                     105

Asp Asn Cys His Phe Gln Glu Ser Thr Glu Leu Asn Asn Thr Phe
                110                 115                     120

Thr Cys Phe Phe Thr Ile Ser Thr Arg Pro Trp Met Thr Gln Phe
                125                 130                     135

Ser Leu Leu Asn Lys Thr Cys Leu Glu Gly Phe His
                140                 145
```

<210> 145
<211> 1157
<212> DNA
<213> Homo Sapien

<400> 145
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ctgtgcagct cgaggctcca gaggcacact ccagagagag ccaaggttct 50

gacgcgatga ggaagcacct gagctggtgg tggctggcca ctgtctgcat 100

gctgctcttc agccacctct ctgcggtcca gacgaggggc atcaagcaca 150

gaatcaagtg gaaccggaag gccctgccca gcactgccca gatcactgag 200

gcccaggtgg ctgagaaccg cccgggagcc ttcatcaagc aaggccgcaa 250

gctcgacatt gacttcggag ccgagggcaa caggtactac gaggccaact 300

actggcagtt ccccgatggc atccactaca acggctgctc tgaggctaat 350

gtgaccaagg aggcatttgt caccggctgc atcaatgcca cccaggcggc 400

gaaccagggg gagttccaga agccagacaa caagctccac cagcaggtgc 450

tctggcggct ggtccaggag ctctgctccc tcaagcattg cgagttttgg 500

ttggagaggg gcgcaggact tcgggtcacc atgcaccagc cagtgctcct 550

ctgccttctg gctttgatct ggctcatggt gaaataagct tgccaggagg 600

ctggcagtac agagcgcagc agcgagcaaa tcctggcaag tgacccagct 650

cttctccccc aaacccacgc gtgttctgaa ggtgcccagg agcggcgatg 700

cactcgcact gcaaatgccg ctcccacgta tgcgccctgg tatgtgcctg 750

cgttctgata gatgggggac tgtggcttct ccgtcactcc attctcagcc 800

cctagcagag cgtctggcac actagattag tagtaaatgc ttgatgagaa 850
```

```
gaacacatca ggcactgcgc cacctgcttc acagtacttc ccaacaactc 900

ttagaggtag gtgtattccc gttttacaga taaggaaact gaggcccaga 950

gagctgaagt actgcaccca gcatcaccag ctagaaagtg gcagagccag 1000

gattcaaccc tggcttgtct aaccccaggt tttctgctct gtccaattcc 1050

agagctgtct ggtgatcact ttatgtctca cagggaccca catccaaaca 1100

tgtatctcta atgaaattgt gaaagctcca tgtttagaaa taaatgaaaa 1150

cacctga 1157
```

<210> 146
<211> 176
<212> PRT
<213> Homo Sapien

<400> 146

```
Met Arg Lys His Leu Ser Trp Trp Leu Ala Thr Val Cys Met
  1               5                  10                  15

Leu Leu Phe Ser His Leu Ser Ala Val Gln Thr Arg Gly Ile Lys
                 20                  25                  30

His Arg Ile Lys Trp Asn Arg Lys Ala Leu Pro Ser Thr Ala Gln
                 35                  40                  45

Ile Thr Glu Ala Gln Val Ala Glu Asn Arg Pro Gly Ala Phe Ile
                 50                  55                  60

Lys Gln Gly Arg Lys Leu Asp Ile Asp Phe Gly Ala Glu Gly Asn
                 65                  70                  75

Arg Tyr Tyr Glu Ala Asn Tyr Trp Gln Phe Pro Asp Gly Ile His
                 80                  85                  90

Tyr Asn Gly Cys Ser Glu Ala Asn Val Thr Lys Glu Ala Phe Val
                 95                  100                 105

Thr Gly Cys Ile Asn Ala Thr Gln Ala Ala Asn Gln Gly Glu Phe
                 110                 115                 120

Gln Lys Pro Asp Asn Lys Leu His Gln Gln Val Leu Trp Arg Leu
                 125                 130                 135

Val Gln Glu Leu Cys Ser Leu Lys His Cys Glu Phe Trp Leu Glu
                 140                 145                 150

Arg Gly Ala Gly Leu Arg Val Thr Met His Gln Pro Val Leu Leu
                 155                 160                 165

Cys Leu Leu Ala Leu Ile Trp Leu Met Val Lys
                 170                 175
```

<210> 147
<211> 333
<212> DNA
<213> Homo Sapien

<400> 147
 gccttggcct cccaaagggc tgggattata ggcgtgacca ccatgtctgg 50

 tccagagtct catttcctga tgatttatag actcaaagaa aactcatgtt 100

 cagaagctct cttctcttct ggcctcctct ctgtcttctt tccctctttc 150

 ttcttatttt aattagtagc atctactcag agtcatgcaa gctggaaatc 200

 tttcattttg cttgtcagtg gggtaggtca ctgagtctta gtttttattt 250

 tttgaaattt caactttcag attcaggggg tacatgtgaa ggtttgtttt 300

 atgagtatat tgcatgatgc tgaggtttgg ggt 333

<210> 148
<211> 73
<212> PRT
<213> Homo Sapien

<400> 148
 Met Phe Arg Ser Ser Leu Leu Phe Trp Pro Pro Leu Cys Leu Leu
  1   5   10   15

 Ser Leu Phe Leu Leu Ile Leu Ile Ser Ser Ile Tyr Ser Glu Ser
                  20   25   30

 Cys Lys Leu Glu Ile Phe His Phe Ala Cys Gln Trp Gly Arg Ser
                  35   40   45

 Leu Ser Leu Ser Phe Tyr Phe Leu Lys Phe Gln Leu Ser Asp Ser
                  50   55   60

 Gly Gly Thr Cys Glu Gly Leu Phe Tyr Glu Tyr Ile Ala
                  65   70

<210> 149
<211> 1893
<212> DNA
<213> Homo Sapien

<400> 149
 gtctccgcgt cacaggaact tcagcaccca cagggcggac agcgctcccc 50

 tctacctgga gacttgactc ccgcgcgccc caaccctgct tatcccttga 100

 ccgtcgagtg tcagagatcc tgcagccgcc cagtcccggc ccctctcccg 150

 ccccacaccc accctcctgg ctcttcctgt ttttactcct ccttttcatt 200

 cataacaaaa gctacagctc caggagccca gcgccgggct gtgacccaag 250

```
ccgagcgtgg aagaatgggg ttcctcggga ccggcacttg gattctggtg 300

ttagtgctcc cgattcaagc tttccccaaa cctggaggaa gccaagacaa 350

atctctacat aatagagaat taagtgcaga aagacctttg aatgaacaga 400

ttgctgaagc agaagaagac aagattaaaa aaacatatcc tccagaaaac 450

aagccaggtc agagcaacta ttcttttgtt gataacttga acctgctaaa 500

ggcaataaca gaaaaggaaa aaattgagaa agaaagacaa tctataagaa 550

gctccccact tgataataag ttgaatgtgg aagatgttga ttcaaccaag 600

aatcgaaaac tgatcgatga ttatgactct actaagagtg gattggatca 650
taaatttcaa gatgatccag atggtcttca tcaactagac gggactcctt 700

taaccgctga agacattgtc cataaaatcg ctgccaggat ttatgaagaa 750

aatgacagag ccgtgtttga caagattgtt tctaaactac ttaatctcgg 800

ccttatcaca gaaagccaag cacatacact ggaagatgaa gtagcagagg 850

ttttacaaaa attaatctca aaggaagcca acaattatga ggaggatccc 900

aataagccca caagctggac tgagaatcag gctggaaaaa taccagagaa 950

agtgactcca atggcagcaa ttcaagatgg tcttgctaag ggagaaaacg 1000

atgaaacagt atctaacaca ttaaccttga caaatggctt ggaaaggaga 1050

actaaaacct acagtgaaga caactttgag gaactccaat atttcccaaa 1100

tttctatgcg ctactgaaaa gtattgattc agaaaaagaa gcaaaagaga 1150

aagaaacact gattactatc atgaaaacac tgattgactt tgtgaagatg 1200

atggtgaaat atggaacaat atctccagaa gaaggtgttt cctaccttga 1250

aaacttggat gaaatgattg ctcttcagac caaaaacaag ctagaaaaaa 1300

atgctactga caatataagc aagcttttcc cagcaccatc agagaagagt 1350

catgaagaaa cagacagtac caaggaagaa gcagctaaga tggaaaagga 1400

atatggaagc ttgaaggatt ccacaaaaga tgataactcc aacccaggag 1450

gaaagacaga tgaacccaaa ggaaaaacag aagcctattt ggaagccatc 1500

agaaaaaata ttgaatggtt gaagaaacat gacaaaaagg gaaataaaga 1550

agattatgac ctttcaaaga tgagagactt catcaataaa caagctgatg 1600

cttatgtgga gaaaggcatc cttgacaagg aagaagccga ggccatcaag 1650

cgcatttata gcagcctgta aaaatggcaa aagatccagg agtctttcaa 1700
```

206

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ctgtttcaga aaacataata tagcttaaaa cacttctaat tctgtgatta 1750

aaattttttg acccaagggt tattagaaag tgctgaattt acagtagtta 1800

accttttaca agtggttaaa acatagcttt cttcccgtaa aaactatctg 1850

aaagtaaagt tgtatgtaag ctgaaaaaaa aaaaaaaaaa aaa 1893
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<210> 150
<211> 468
<212> PRT
<213> Homo Sapien

<400> 150

```
Met Gly Phe Leu Gly Thr Gly Thr Trp Ile Leu Val Leu Val Leu
 1               5                   10                  15

Pro Ile Gln Ala Phe Pro Lys Pro Gly Gly Ser Gln Asp Lys Ser
                20                  25                  30

Leu His Asn Arg Glu Leu Ser Ala Glu Arg Pro Leu Asn Glu Gln
                35                  40                  45

Ile Ala Glu Ala Glu Glu Asp Lys Ile Lys Lys Thr Tyr Pro Pro
                50                  55                  60

Glu Asn Lys Pro Gly Gln Ser Asn Tyr Ser Phe Val Asp Asn Leu
                65                  70                  75

Asn Leu Leu Lys Ala Ile Thr Glu Lys Glu Lys Ile Glu Lys Glu
                80                  85                  90

Arg Gln Ser Ile Arg Ser Ser Pro Leu Asp Asn Lys Leu Asn Val
                95                  100                 105

Glu Asp Val Asp Ser Thr Lys Asn Arg Lys Leu Ile Asp Asp Tyr
                110                 115                 120

Asp Ser Thr Lys Ser Gly Leu Asp His Lys Phe Gln Asp Asp Pro
                125                 130                 135

Asp Gly Leu His Gln Leu Asp Gly Thr Pro Leu Thr Ala Glu Asp
                140                 145                 150

Ile Val His Lys Ile Ala Ala Arg Ile Tyr Glu Glu Asn Asp Arg
                155                 160                 165

Ala Val Phe Asp Lys Ile Val Ser Lys Leu Leu Asn Leu Gly Leu
                170                 175                 180

Ile Thr Glu Ser Gln Ala His Thr Leu Glu Asp Glu Val Ala Glu
                185                 190                 195

Val Leu Gln Lys Leu Ile Ser Lys Glu Ala Asn Asn Tyr Glu Glu
                200                 205                 210

Asp Pro Asn Lys Pro Thr Ser Trp Thr Glu Asn Gln Ala Gly Lys
```

207

```
                215                        220                        225

    Ile Pro Glu Lys Val Thr Pro Met Ala Ala Ile Gln Asp Gly Leu
                    230                 235                    240

    Ala Lys Gly Glu Asn Asp Glu Thr Val Ser Asn Thr Leu Thr Leu
                    245                 250                    255

    Thr Asn Gly Leu Glu Arg Arg Thr Lys Thr Tyr Ser Glu Asp Asn
                    260                 265                    270

    Phe Glu Glu Leu Gln Tyr Phe Pro Asn Phe Tyr Ala Leu Leu Lys
                    275                 280                    285

    Ser Ile Asp Ser Glu Lys Glu Ala Lys Glu Lys Glu Thr Leu Ile
                    290                 295                    300

    Thr Ile Met Lys Thr Leu Ile Asp Phe Val Lys Met Met Val Lys
                    305                 310                    315

    Tyr Gly Thr Ile Ser Pro Glu Glu Gly Val Ser Tyr Leu Glu Asn
                    320                 325                    330

    Leu Asp Glu Met Ile Ala Leu Gln Thr Lys Asn Lys Leu Glu Lys
                    335                 340                    345

    Asn Ala Thr Asp Asn Ile Ser Lys Leu Phe Pro Ala Pro Ser Glu
                    350                 355                    360

    Lys Ser His Glu Glu Thr Asp Ser Thr Lys Glu Glu Ala Ala Lys
                    365                 370                    375

    Met Glu Lys Glu Tyr Gly Ser Leu Lys Asp Ser Thr Lys Asp Asp
                    380                 385                    390

    Asn Ser Asn Pro Gly Gly Lys Thr Asp Glu Pro Lys Gly Lys Thr
                    395                 400                    405

    Glu Ala Tyr Leu Glu Ala Ile Arg Lys Asn Ile Glu Trp Leu Lys
                    410                 415                    420

    Lys His Asp Lys Lys Gly Asn Lys Glu Asp Tyr Asp Leu Ser Lys
                    425                 430                    435

    Met Arg Asp Phe Ile Asn Lys Gln Ala Asp Ala Tyr Val Glu Lys
                    440                 445                    450

    Gly Ile Leu Asp Lys Glu Glu Ala Glu Ala Ile Lys Arg Ile Tyr
                    455                 460                    465

    Ser Ser Leu


<210> 151
<211> 2598
<212> DNA
<213> Homo Sapien


                                208
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<400> 151
cggctcgagg ctcccgccag gagaaaggaa cattctgagg ggagtctaca 50

ccctgtggag ctcaagatgg tcctgagtgg ggcgctgtgc ttccgaatga 100

aggactcggc attgaaggtg ctttatctgc ataataacca gcttctagct 150

ggagggctgc atgcagggaa ggtcattaaa ggtgaagaga tcagcgtggt 200

ccccaatcgg tggctggatg ccagcctgtc ccccgtcatc ctgggtgtcc 250

agggtggaag ccagtgcctg tcatgtgggg tggggcagga gccgactcta 300

acactagagc cagtgaacat catggagctc tatcttggtg ccaaggaatc 350

caagagcttc accttctacc ggcgggacat ggggctcacc tccagcttcg 400

agtcggctgc ctacccgggc tggttcctgt gcacggtgcc tgaagccgat 450

cagcctgtca gactcaccca gcttcccgag aatggtggct ggaatgcccc 500

catcacagac ttctacttcc agcagtgtga ctagggcaac gtgcccccca 550

gaactccctg ggcagagcca gctcgggtga ggggtgagtg gaggagaccc 600

atggcggaca atcactctct ctgctctcag gaccccacg tctgacttag 650

tgggcacctg accactttgt cttctggttc ccagtttgga taaattctga 700

gatttggagc tcagtccacg gtcctccccc actggatggt gctactgctg 750

tggaaccttg taaaaaccat gtggggtaaa ctgggaataa catgaaaaga 800

tttctgtggg ggtggggtgg gggagtggtg ggaatcattc ctgcttaatg 850

gtaactgaca agtgttaccc tgagccccgc aggccaaccc atccccagtt 900

gagccttata gggtcagtag ctctccacat gaagtcctgt cactcaccac 950

tgtgcaggag agggaggtgg tcatagagtc agggatctat ggcccttggc 1000

ccagccccac ccccttccct ttaatcctgc cactgtcata tgctaccttt 1050

cctatctctt ccctcatcat cttgttgtgg gcatgaggag gtggtgatgt 1100

cagaagaaat ggctcgagct cagaagataa aagataagta gggtatgctg 1150

atcctctttt aaaaacccaa gatacaatca aaatcccaga tgctggtctc 1200

tattcccatg aaaaagtgct catgacatat tgagaagacc tacttacaaa 1250

gtggcatata ttgcaattta ttttaattaa aagataccta tttatatatt 1300

tctttataga aaaaagtctg gaagagttta cttcaattgt agcaatgtca 1350

gggtggtggc agtataggtg attttctttt taattctgtt aatttatctg 1400

209

```
tatttcctaa ttttctaca atgaagatga attccttgta taaaaataag 1450

aaaagaaatt aatcttgagg taagcagagc agacatcatc tctgattgtc 1500

ctcagcctcc acttccccag agtaaattca aattgaatcg agctctgctg 1550

ctctggttgg ttgtagtagt gatcaggaaa cagatctcag caaagccact 1600

gaggaggagg ctgtgctgag tttgtgtggc tggaatctct gggtaaggaa 1650

cttaaagaac aaaaatcatc tggtaattct ttcctagaag gatcacagcc 1700

cctgggattc caaggcattg gatccagtct ctaagaaggc tgctgtactg 1750

gttgaattgt gtcccccctca aattcacatc cttcttggaa tctcagtctg 1800

tgagtttatt tggagataag gtctctgcag atgtagttag ttaagacaag 1850

gtcatgctgg atgaaggtag acctaaattc aatatgactg gtttccttgt 1900

atgaaaagga gaggacacag agacagagga gacgcgggga agactatgta 1950

aagatgaagg cagagatcgg agttttgcag ccacaagcta agaaacacca 2000

aggattgtgg caaccatcag aagcttggaa gaggcaaaga agaattcttc 2050

cctagaggct ttagagggat aacggctctg ctgaaacctt aatctcagac 2100

ttccagcctc ctgaacgaag aaagaataaa tttcggctgt tttaagccac 2150

caaggataat tggttacagc agctctagga aactaataca gctgctaaaa 2200

tgatccctgt ctcctcgtgt ttacattctg tgtgtgtccc ctcccacaat 2250

gtaccaaagt tgtctttgtg accaatagaa tatggcagaa gtgatggcat 2300

gccacttcca agattaggtt ataaaagaca ctgcagcttc tacttgagcc 2350

ctctctctct gccacccacc gcccccaatc tatcttggct cactcgctct 2400

gggggaagct agctgccatg ctatgagcag gcctataaag agacttacgt 2450

ggtaaaaaat gaagtctcct gcccacagcc acattagtga acctagaagc 2500

agagactctg tgagataatc gatgtttgtt gttttaagtt gctcagtttt 2550

ggtctaactt gttatgcagc aatagataaa taatatgcag agaaagag 2598
```

<210> 152
<211> 155
<212> PRT
<213> Homo Sapien

<400> 152
```
 Met Val Leu Ser Gly Ala Leu Cys Phe Arg Met Lys Asp Ser Ala
   1               5                  10                  15
```

```
Leu Lys Val Leu Tyr Leu His Asn Asn Gln Leu Leu Ala Gly Gly
                20                  25                  30

Leu His Ala Gly Lys Val Ile Lys Gly Glu Glu Ile Ser Val Val
                35                  40                  45

Pro Asn Arg Trp Leu Asp Ala Ser Leu Ser Pro Val Ile Leu Gly
                50                  55                  60

Val Gln Gly Gly Ser Gln Cys Leu Ser Cys Gly Val Gly Gln Glu
                65                  70                  75

Pro Thr Leu Thr Leu Glu Pro Val Asn Ile Met Glu Leu Tyr Leu
                80                  85                  90

Gly Ala Lys Glu Ser Lys Ser Phe Thr Phe Tyr Arg Arg Asp Met
                95                  100                 105

Gly Leu Thr Ser Ser Phe Glu Ser Ala Ala Tyr Pro Gly Trp Phe
                110                 115                 120

Leu Cys Thr Val Pro Glu Ala Asp Gln Pro Val Arg Leu Thr Gln
                125                 130                 135

Leu Pro Glu Asn Gly Gly Trp Asn Ala Pro Ile Thr Asp Phe Tyr
                140                 145                 150

Phe Gln Gln Cys Asp
                155
```
<210> 153
<211> 1152
<212> DNA
<213> Homo Sapien

<400> 153
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 cttcagaaca ggttctcctt ccccagtcac cagttgctcg agttagaatt 50

 gtctgcaatg gccgccctgc agaaatctgt gagctctttc cttatgggga 100

 ccctggccac cagctgcctc cttctcttgg ccctcttggt acagggagga 150

 gcagctgcgc ccatcagctc ccactgcagg cttgacaagt ccaacttcca 200

 gcagccctat atcaccaacc gcaccttcat gctggctaag gaggctagct 250

 tggctgataa caacacagac gttcgtctca ttggggagaa actgttccac 300

 ggagtcagta tgagtgagcg ctgctatctg atgaagcagg tgctgaactt 350

 caccccttgaa gaagtgctgt tccctcaatc tgataggttc cagccttata 400

 tgcaggaggt ggtgcccttc ctggccaggc tcagcaacag gctaagcaca 450

 tgtcatattg aaggtgatga cctgcatatc cagaggaatg tgcaaaagct 500

 gaaggacaca gtgaaaaagc ttggagagag tggagagatc aaagcaattg 550
```

211

```
gagaactgga tttgctgttt atgtctctga gaaatgcctg catttgacca 600

gagcaaagct gaaaaatgaa taactaaccc cctttccctg ctagaaataa 650

caattagatg ccccaaagcg attttttta accaaaagga agatgggaag 700

ccaaactcca tcatgatggg tggattccaa atgaacccct gcgttagtta 750

caaaggaaac caatgccact tttgtttata agaccagaag gtagactttc 800

taagcataga tatttattga taacatttca ttgtaactgg tgttctatac 850

acagaaaaca atttattttt taaataattg tcttttccca taaaaagat 900

tactttccat tcctttaggg gaaaaaaccc ctaaatagct tcatgtttcc 950

ataatcagta ctttatattt ataaatgtat ttattattat tataagactg 1000

cattttattt atatcatttt attaatatgg atttatttat agaaacatca 1050

ttcgatattg ctacttgagt gtaaggctaa tattgatatt tatgacaata 1100

attatagagc tataacatgt ttatttgacc tcaataaaca cttggatatc 1150

cc 1152


<210> 154
<211> 179
<212> PRT
<213> Homo Sapien

<400> 154
 Met Ala Ala Leu Gln Lys Ser Val Ser Ser Phe Leu Met Gly Thr
  1               5                  10                  15

 Leu Ala Thr Ser Cys Leu Leu Leu Ala Leu Leu Val Gln Gly
                  20                  25                  30

 Gly Ala Ala Ala Pro Ile Ser Ser His Cys Arg Leu Asp Lys Ser
                  35                  40                  45

 Asn Phe Gln Gln Pro Tyr Ile Thr Asn Arg Thr Phe Met Leu Ala
                  50                  55                  60

 Lys Glu Ala Ser Leu Ala Asp Asn Asn Thr Asp Val Arg Leu Ile
                  65                  70                  75

 Gly Glu Lys Leu Phe His Gly Val Ser Met Ser Glu Arg Cys Tyr
                  80                  85                  90

 Leu Met Lys Gln Val Leu Asn Phe Thr Leu Glu Glu Val Leu Phe
                  95                 100                 105

 Pro Gln Ser Asp Arg Phe Gln Pro Tyr Met Gln Glu Val Val Pro
                 110                 115                 120
```

```
Phe Leu Ala Arg Leu Ser Asn Arg Leu Ser Thr Cys His Ile Glu
                125                 130                 135

Gly Asp Asp Leu His Ile Gln Arg Asn Val Gln Lys Leu Lys Asp
                140                 145                 150

Thr Val Lys Lys Leu Gly Glu Ser Gly Glu Ile Lys Ala Ile Gly
                155                 160                 165

Glu Leu Asp Leu Leu Phe Met Ser Leu Arg Asn Ala Cys Ile
                170                 175
```

<210> 155
<211> 1320
<212> DNA
<213> Homo Sapien

<400> 155

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ggcttgctga aaataaaatc aggactccta acctgctcca gtcagcctgc 50

ttccacgagg cctgtcagtc agtgcccgac ttgtgactga gtgtgcagtg 100

cccagcatgt accaggtcag tgcagagggc tgcctgaggg ctgtgctgag 150

agggagagga gcagagatgc tgctgagggt ggagggaggc caagctgcca 200

ggtttggggc tgggggccaa gtggagtgag aaactgggat cccaggggga 250

gggtgcagat gagggagcga cccagattag gtgaggacag ttctctcatt 300

agccttttcc tacaggtggt tgcattcttg gcaatggtca tgggaaccca 350

cacctacagc cactggccca gctgctgccc cagcaaaggg caggacacct 400

ctgaggagct gctgaggtgg agcactgtgc ctgtgcctcc cctagagcct 450

gctaggccca accgccaccc agagtcctgt agggccagtg aagatggacc 500

cctcaacagc agggccatct ccccctggag atatgagttg acagagact 550

tgaaccggct cccccaggac ctgtaccacg cccgttgcct gtgcccgcac 600

tgcgtcagcc tacagacagg ctcccacatg daccccnggg gcaactcgga 650

gctgctctac cacaaccaga ctgtcttcta caggcggcca tgccatggcg 700

agaagggcac ccacaagggc tactgcctgg agcgcaggct gtaccgtgtt 750

tccttagctt gtgtgtgtgt gcggccccgt gtgatgggct agccggacct 800

gctggaggct ggtccctttt tgggaaacct ggagccaggt gtacaaccac 850

ttgccatgaa gggccaggat gcccagatgc ttggcccctg tgaagtgctg 900

tctggagcag caggatcccg gacaggatg ggggctttg gggaaacct 950

gcacttctgc acattttgaa aagagcagct gctgcttagg gccgccggaa 1000
```

```
gctggtgtcc tgtcattttc tctcaggaaa ggttttcaaa gttctgccca 1050

tttctggagg ccaccactcc tgtctcttcc tcttttccca tcccctgcta 1100

ccctggccca gcacaggcac tttctagata tttccccctt gctggagaag 1150

aaagagcccc tggtttt att tgtttgttta ctcatcactc agtgagcatc 1200

tactttgggt gcattctagt gtagttacta gtcttttgac atggatgatt 1250

ctgaggagga agctgttatt gaatgtatag agatttatcc aaataaatat 1300

ctttatttaa aaatgaaaaa 1320
```

<210> 156
<211> 177
<212> PRT
<213> Homo Sapien

<400> 156

```
Met Arg Glu Arg Pro Arg Leu Gly Glu Asp Ser Ser Leu Ile Ser
 1               5                  10                  15

Leu Phe Leu Gln Val Val Ala Phe Leu Ala Met Val Met Gly Thr
                20                  25                  30

His Thr Tyr Ser His Trp Pro Ser Cys Cys Pro Ser Lys Gly Gln
                35                  40                  45

Asp Thr Ser Glu Glu Leu Leu Arg Trp Ser Thr Val Pro Val Pro
                50                  55                  60

Pro Leu Glu Pro Ala Arg Pro Asn Arg His Pro Glu Ser Cys Arg
                65                  70                  75

Ala Ser Glu Asp Gly Pro Leu Asn Ser Arg Ala Ile Ser Pro Trp
                80                  85                  90

Arg Tyr Glu Leu Asp Arg Asp Leu Asn Arg Leu Pro Gln Asp Leu
                95                  100                 105

Tyr His Ala Arg Cys Leu Cys Pro His Cys Val Ser Leu Gln Thr
                110                 115                 120

Gly Ser His Met Asp Pro Arg Gly Asn Ser Glu Leu Leu Tyr His
                125                 130                 135

Asn Gln Thr Val Phe Tyr Arg Arg Pro Cys His Gly Glu Lys Gly
                140                 145                 150

Thr His Lys Gly Tyr Cys Leu Glu Arg Arg Leu Tyr Arg Val Ser
                155                 160                 165

Leu Ala Cys Val Cys Val Arg Pro Arg Val Met Gly
                170                 175
```

214

<210> 157
<211> 1515
<212> DNA
<213> Homo Sapien

<400> 157
ccggcgatgt cgctcgtgct gctaagcctg gccgcgctgt gcaggagcgc 50

cgtaccccga gagccgaccg ttcaatgtgg ctctgaaact gggccatctc 100

cagagtggat gctacaacat gatctaatcc ccggagactt gagggacctc 150

cgagtagaac ctgttacaac tagtgttgca acaggggact attcaatttt 200

gatgaatgta agctgggtac tccgggcaga tgccagcatc cgcttgttga 250

aggccaccaa gatttgtgtg acgggcaaaa gcaacttcca gtcctacagc 300

tgtgtgaggt gcaattacac agaggccttc cagactcaga ccagaccctc 350

tggtggtaaa tggacatttt cctacatcgg cttccctgta gagctgaaca 400

cagtctattt cattggggcc cataatattc ctaatgcaaa tatgaatgaa 450

gatggccctt ccatgtctgt gaatttcacc tcaccaggct gcctagacca 500

cataatgaaa tataaaaaaa agtgtgtcaa ggccggaagc ctgtgggatc 550

cgaacatcac tgcttgtaag aagaatgagg agacagtaga agtgaacttc 600

acaaccactc ccctgggaaa cagatacatg gctcttatcc aacacagcac 650

tatcatcggg ttttctcagg tgtttgagcc acaccagaag aaacaaacgc 700

gagcttcagt ggtgattcca gtgactgggg atagtgaagg tgctacggtg 750

cagctgactc catattttcc tacttgtggc agcgactgca tccgacataa 800

aggaacagtt gtgctctgcc cacaaacagg cgtccctttc cctctggata 850

acaacaaaag caagccggga ggctggctgc ctctcctcct gctgtctctg 900

ctggtggcca catgggtgct ggtggcaggg atctatctaa tgtggaggca 950

cgaaaggatc aagaagactt ccttttctac caccacacta ctgcccccca 1000

ttaaggttct tgtggtttac ccatctgaaa tatgtttcca tcacacaatt 1050

tgttacttca ctgaatttct tcaaaaccat tgcagaagtg aggtcatcct 1100

tgaaaagtgg cagaaaaaga aaatagcaga gatgggtcca gtgcagtggc 1150

ttgccactca aaagaaggca gcagacaaag tcgtcttcct tctttccaat 1200

gacgtcaaca gtgtgtgcga tggtacctgt ggcaagagcg agggcagtcc 1250

cagtgagaac tctcaagacc tcttccccct tgcctttaac cttttctgca 1300

```
gtgatctaag aagccagatt catctgcaca aatacgtggt ggtctacttt 1350

agagagattg atacaaaaga cgattacaat gctctcagtg tctgccccaa 1400

gtaccacctc atgaaggatg ccactgcttt ctgtgcagaa cttctccatg 1450

tcaagcagca ggtgtcagca ggaaaaagat cacaagcctg ccacgatggc 1500

tgctgctcct tgtag 1515
```

<210> 158
<211> 502
<212> PRT
<213> Homo Sapien

<400> 158

```
 Met Ser Leu Val Leu Leu Ser Leu Ala Ala Leu Cys Arg Ser Ala
  1               5                  10                  15

 Val Pro Arg Glu Pro Thr Val Gln Cys Gly Ser Glu Thr Gly Pro
                 20                  25                  30

 Ser Pro Glu Trp Met Leu Gln His Asp Leu Ile Pro Gly Asp Leu
                 35                  40                  45

 Arg Asp Leu Arg Val Glu Pro Val Thr Thr Ser Val Ala Thr Gly
                 50                  55                  60

 Asp Tyr Ser Ile Leu Met Asn Val Ser Trp Val Leu Arg Ala Asp
                 65                  70                  75

 Ala Ser Ile Arg Leu Leu Lys Ala Thr Lys Ile Cys Val Thr Gly
                 80                  85                  90

 Lys Ser Asn Phe Gln Ser Tyr Ser Cys Val Arg Cys Asn Tyr Thr
                 95                 100                 105

 Glu Ala Phe Gln Thr Gln Thr Arg Pro Ser Gly Gly Lys Trp Thr
                110                 115                 120

 Phe Ser Tyr Ile Gly Phe Pro Val Glu Leu Asn Thr Val Tyr Phe
                125                 130                 135

 Ile Gly Ala His Asn Ile Pro Asn Ala Asn Met Asn Glu Asp Gly
                140                 145                 150

 Pro Ser Met Ser Val Asn Phe Thr Ser Pro Gly Cys Leu Asp His
                155                 160                 165

 Ile Met Lys Tyr Lys Lys Lys Cys Val Lys Ala Gly Ser Leu Trp
                170                 175                 180

 Asp Pro Asn Ile Thr Ala Cys Lys Lys Asn Glu Glu Thr Val Glu
                185                 190                 195

 Val Asn Phe Thr Thr Thr Pro Leu Gly Asn Arg Tyr Met Ala Leu
```
```

216
```

Ile Gln His Ser Thr Ile Ile Gly Phe Ser Gln Val Phe Glu Pro
                215                          220                          225

His Gln Lys Lys Gln Thr Arg Ala Ser Val Val Ile Pro Val Thr
                230                          235                          240

Gly Asp Ser Glu Gly Ala Thr Val Gln Leu Thr Pro Tyr Phe Pro
                245                          250                          255

Thr Cys Gly Ser Asp Cys Ile Arg His Lys Gly Thr Val Val Leu
                260                          265                          270

Cys Pro Gln Thr Gly Val Pro Phe Pro Leu Asp Asn Asn Lys Ser
                275                          280                          285

Lys Pro Gly Gly Trp Leu Pro Leu Leu Leu Leu Ser Leu Leu Val
                290                          295                          300

Ala Thr Trp Val Leu Val Ala Gly Ile Tyr Leu Met Trp Arg His
                305                          310                          315

Glu Arg Ile Lys Lys Thr Ser Phe Ser Thr Thr Thr Leu Leu Pro
                320                          325                          330

Pro Ile Lys Val Leu Val Val Tyr Pro Ser Glu Ile Cys Phe His
                335                          340                          345

His Thr Ile Cys Tyr Phe Thr Glu Phe Leu Gln Asn His Cys Arg
                350                          355                          360

Ser Glu Val Ile Leu Glu Lys Trp Gln Lys Lys Lys Ile Ala Glu
                365                          370                          375

Met Gly Pro Val Gln Trp Leu Ala Thr Gln Lys Lys Ala Ala Asp
                380                          385                          390

Lys Val Val Phe Leu Leu Ser Asn Asp Val Asn Ser Val Cys Asp
                395                          400                          405

Gly Thr Cys Gly Lys Ser Glu Gly Ser Pro Ser Glu Asn Ser Gln
                410                          415                          420

Asp Leu Phe Pro Leu Ala Phe Asn Leu Phe Cys Ser Asp Leu Arg
                425                          430                          435

Ser Gln Ile His Leu His Lys Tyr Val Val Val Tyr Phe Arg Glu
                440                          445                          450

Ile Asp Thr Lys Asp Asp Tyr Asn Ala Leu Ser Val Cys Pro Lys
                455                          460                          465

Tyr His Leu Met Lys Asp Ala Thr Ala Phe Cys Ala Glu Leu Leu
                470                          475                          480

His Val Lys Gln Gln Val Ser Ala Gly Lys Arg Ser Gln Ala Cys

```
 His Asp Gly Cys Cys Ser Leu
                 500
```

```
<210> 159
<211> 535
<212> DNA
<213> Homo Sapien
```

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<400> 159
 agccaccagc gcaacatgac agtgaagacc ctgcatggcc cagccatggt 50

 caagtacttg ctgctgtcga tattggggct tgcctttctg agtgaggcgg 100

 cagctcggaa aatccccaaa gtaggacata ctttttttcca aaagcctgag 150

 agttgcccgc ctgtgccagg aggtagtatg aagcttgaca ttggcatcat 200

 caatgaaaac cagcgcgttt ccatgtcacg taacatcgag agccgctcca 250

 cctcccccctg gaattacact gtcacttggg accccaaccg gtaccccctcg 300

 gaagttgtac aggcccagtg taggaacttg ggctgcatca atgctcaagg 350

 aaaggaagac atctccatga attccgttcc catccagcaa gagaccctgg 400

 tcgtccggag gaagcaccaa ggctgctctg tttctttcca gttggagaag 450

 gtgctggtga ctgttggctg cacctgcgtc accccctgtca tccaccatgt 500

 gcagtaagag gtgcatatcc actcagctga agaag 535
```

```
<210> 160
<211> 163
<212> PRT
<213> Homo Sapien
```

```
<400> 160
 Met Thr Val Lys Thr Leu His Gly Pro Ala Met Val Lys Tyr Leu
   1               5              10                  15

 Leu Leu Ser Ile Leu Gly Leu Ala Phe Leu Ser Glu Ala Ala Ala
                 20              25                  30

 Arg Lys Ile Pro Lys Val Gly His Thr Phe Phe Gln Lys Pro Glu
                 35              40                  45

 Ser Cys Pro Pro Val Pro Gly Gly Ser Met Lys Leu Asp Ile Gly
                 50              55                  60

 Ile Ile Asn Glu Asn Gln Arg Val Ser Met Ser Arg Asn Ile Glu
                 65              70                  75

 Ser Arg Ser Thr Ser Pro Trp Asn Tyr Thr Val Thr Trp Asp Pro
                 80              85                  90
```

Asn Arg Tyr Pro Ser Glu Val Val Gln Ala Gln Cys Arg Asn Leu
                95   100   105

Gly Cys Ile Asn Ala Gln Gly Lys Glu Asp Ile Ser Met Asn Ser
                110   115   120

Val Pro Ile Gln Gln Glu Thr Leu Val Val Arg Arg Lys His Gln
                125   130   135

Gly Cys Ser Val Ser Phe Gln Leu Glu Lys Val Leu Val Thr Val
                140   145   150

Gly Cys Thr Cys Val Thr Pro Val Ile His His Val Gln
                155   160

<210> 161
<211> 2380
<212> DNA
<213> Homo Sapien

<400> 161
 acactggcca aacaaaaacg aaagcactcc gtgctggaag taggaggaga 50

 gtcaggactc ccaggacaga gagtgcacaa actacccagc acagccccct 100

 ccgccccctc tggaggctga agagggattc cagcccctgc cacccacaga 150

 cacgggctga ctggggtgtc tgcccccctt gggggggggc agcacagggc 200

 ctcaggcctg ggtgccacct ggcacctaga agatgcctgt gccctggttc 250

 ttgctgtcct tggcactggg ccgaagccca gtggtccttt ctctggagag 300

 gcttgtgggg cctcaggacg ctacccactg ctctccgggc ctctcctgcc 350

 gcctctggga cagtgacata ctctgcctgc ctggggacat cgtgcctgct 400

 ccgggccccg tgctggcgcc tacgcacctg cagacagagc tggtgctgag 450

 gtgccagaag agaccgact gtgacctctg tctgcgtgtg gctgtccact 500

 tggccgtgca tgggcactgg gaagagcctg aagatgagga aaagtttgga 550

 ggagcagctg actcaggggt ggaggagcct aggaatgcct ctctccaggc 600

 ccaagtcgtg ctctccttcc aggcctaccc tactgcccgc tgcgtcctgc 650

 tggaggtgca agtgcctgct gcccttgtgc agtttggtca gtctgtgggc 700

 tctgtggtat atgactgctt cgaggctgcc ctagggagtg aggtacgaat 750

 ctggtcctat actcagccca ggtacgagaa ggaactcaac cacacacagc 800

 agctgcctgc cctgccctgg ctcaacgtgt cagcagatgg tgacaacgtg 850
 catctggttc tgaatgtctc tgaggagcag cacttcggcc tctccctgta 900

 ctggaatcag gtccagggcc ccccaaaacc ccggtggcac aaaaacctga 950

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ctggaccgca gatcattacc ttgaaccaca cagacctggt tccctgcctc 1000

tgtattcagg tgtggcctct ggaacctgac tccgttagga cgaacatctg 1050

ccccttcagg gaggaccccc gcgcacacca gaacctctgg caagccgccc 1100

gactgcgact gctgaccctg cagagctggc tgctggacgc accgtgctcg 1150

ctgcccgcag aagcggcact gtgctggcgg gctccgggtg gggacccctg 1200

ccagccactg gtcccaccgc tttcctggga gaacgtcact gtggacaagg 1250

ttctcgagtt cccattgctg aaaggccacc ctaacctctg tgttcaggtg 1300

aacagctcgg agaagctgca gctgcaggag tgcttgtggg ctgactccct 1350

ggggcctctc aaagacgatg tgctactgtt ggagacacga ggcccccagg 1400

acaacagatc cctctgtgcc ttggaaccca gtggctgtac ttcactaccc 1450

agcaaagcct ccacgagggc agctcgcctt ggagagtact tactacaaga 1500

cctgcagtca ggccagtgtc tgcagctatg ggacgatgac ttgggagcgc 1550

tatgggcctg ccccatggac aaatacatcc acaagcgctg ggccctcgtg 1600

tggctggcct gcctactctt tgccgctgcg ctttccctca tcctccttct 1650

caaaaaggat cacgcgaaag ggtggctgag gctcttgaaa caggacgtcc 1700

gctcgggggc ggccgccagg ggccgcgcgg ctctgctcct ctactcagcc 1750

gatgactcgg gtttcgagcg cctggtgggc gccctggcgt cggccctgtg 1800

ccagctgccg ctgcgcgtgg ccgtagacct gtggagccgt cgtgaactga 1850

gcgcgcaggg gcccgtggct tggtttcacg cgcagcggcg ccagaccctg 1900

caggagggcg gcgtggtggt cttgctcttc tctcccggtg cggtggcgct 1950

gtgcagcgag tggctacagg atggggtgtc cgggcccggg gcgcacggcc 2000

cgcacgacgc cttccgcgcc tcgctcagct gcgtgctgcc cgacttcttg 2050

cagggccggg cgcccggcag ctacgtgggg gcctgcttcg acaggctgct 2100

ccacccggac gccgtacccg cccttttccg caccgtgccc gtcttcacac 2150

tgccctccca actgccagac ttcctggggg ccctgcagca gcctcgcgcc 2200

ccgcgttccg ggcggctcca agagagagcg gagcaagtgt cccgggccct 2250

tcagccagcc ctggatagct acttccatcc cccgggggact cccgcgccgg 2300

gacgcggggt gggaccaggg gcgggacctg gggcggggga cgggacttaa 2350
```

```
   ataaaggcag acgctgtttt tctaaaaaaa 2380
```

<210> 162
<211> 705
<212> PRT
<213> Homo Sapien

<400> 162

```
 Met Pro Val Pro Trp Phe Leu Leu Ser Leu Ala Leu Gly Arg Ser
  1               5                  10                  15

 Pro Val Val Leu Ser Leu Glu Arg Leu Val Gly Pro Gln Asp Ala
                 20                  25                  30

 Thr His Cys Ser Pro Gly Leu Ser Cys Arg Leu Trp Asp Ser Asp
                 35                  40                  45

 Ile Leu Cys Leu Pro Gly Asp Ile Val Pro Ala Pro Gly Pro Val
                 50                  55                  60

 Leu Ala Pro Thr His Leu Gln Thr Glu Leu Val Leu Arg Cys Gln
                 65                  70                  75

 Lys Glu Thr Asp Cys Asp Leu Cys Leu Arg Val Ala Val His Leu
                 80                  85                  90

 Ala Val His Gly His Trp Glu Glu Pro Glu Asp Glu Glu Lys Phe
                 95                 100                 105

 Gly Gly Ala Ala Asp Ser Gly Val Glu Glu Pro Arg Asn Ala Ser
                110                 115                 120

 Leu Gln Ala Gln Val Val Leu Ser Phe Gln Ala Tyr Pro Thr Ala
                125                 130                 135

 Arg Cys Val Leu Leu Glu Val Gln Val Pro Ala Ala Leu Val Gln
                140                 145                 150

 Phe Gly Gln Ser Val Gly Ser Val Val Tyr Asp Cys Phe Glu Ala
                155                 160                 165

 Ala Leu Gly Ser Glu Val Arg Ile Trp Ser Tyr Thr Gln Pro Arg
                170                 175                 180

 Tyr Glu Lys Glu Leu Asn His Thr Gln Gln Leu Pro Ala Leu Pro
                185                 190                 195

 Trp Leu Asn Val Ser Ala Asp Gly Asp Asn Val His Leu Val Leu
                200                 205                 210

 Asn Val Ser Glu Glu Gln His Phe Gly Leu Ser Leu Tyr Trp Asn
                215                 220                 225

 Gln Val Gln Gly Pro Pro Lys Pro Arg Trp His Lys Asn Leu Thr
                230                 235                 240

 Gly Pro Gln Ile Ile Thr Leu Asn His Thr Asp Leu Val Pro Cys
```

Leu Cys Ile Gln Val Trp Pro Leu Glu Pro Asp Ser Val Arg Thr
                260   265   270

Asn Ile Cys Pro Phe Arg Glu Asp Pro Arg Ala His Gln Asn Leu
                275   280   285

Trp Gln Ala Ala Arg Leu Arg Leu Leu Thr Leu Gln Ser Trp Leu
                290   295   300

Leu Asp Ala Pro Cys Ser Leu Pro Ala Glu Ala Ala Leu Cys Trp
                305   310   315

Arg Ala Pro Gly Gly Asp Pro Cys Gln Pro Leu Val Pro Pro Leu
                320   325   330

Ser Trp Glu Asn Val Thr Val Asp Lys Val Leu Glu Phe Pro Leu
                335   340   345

Leu Lys Gly His Pro Asn Leu Cys Val Gln Val Asn Ser Ser Glu
                350   355   360

Lys Leu Gln Leu Gln Glu Cys Leu Trp Ala Asp Ser Leu Gly Pro
                365   370   375

Leu Lys Asp Asp Val Leu Leu Leu Glu Thr Arg Gly Pro Gln Asp
                380   385   390

Asn Arg Ser Leu Cys Ala Leu Glu Pro Ser Gly Cys Thr Ser Leu
                395   400   405

Pro Ser Lys Ala Ser Thr Arg Ala Ala Arg Leu Gly Glu Tyr Leu
                410   415   420

Leu Gln Asp Leu Gln Ser Gly Gln Cys Leu Gln Leu Trp Asp Asp
                425   430   435

Asp Leu Gly Ala Leu Trp Ala Cys Pro Met Asp Lys Tyr Ile His
                440   445   450

Lys Arg Trp Ala Leu Val Trp Leu Ala Cys Leu Leu Phe Ala Ala
                455   460   465

Ala Leu Ser Leu Ile Leu Leu Leu Lys Lys Asp His Ala Lys Gly
                470   475   480

Trp Leu Arg Leu Leu Lys Gln Asp Val Arg Ser Gly Ala Ala Ala
                485   490   495

Arg Gly Arg Ala Ala Leu Leu Leu Tyr Ser Ala Asp Asp Ser Gly
                500   505   510

Phe Glu Arg Leu Val Gly Ala Leu Ala Ser Ala Leu Cys Gln Leu
                515   520   525

Pro Leu Arg Val Ala Val Asp Leu Trp Ser Arg Arg Glu Leu Ser

Ala Gln Gly Pro Val Ala Trp Phe His Ala Gln Arg Arg Gln Thr
                   545   550   555

Leu Gln Glu Gly Gly Val Val Val Leu Leu Phe Ser Pro Gly Ala
                   560   565   570

Val Ala Leu Cys Ser Glu Trp Leu Gln Asp Gly Val Ser Gly Pro
                   575   580   585

Gly Ala His Gly Pro His Asp Ala Phe Arg Ala Ser Leu Ser Cys
                   590   595   600

Val Leu Pro Asp Phe Leu Gln Gly Arg Ala Pro Gly Ser Tyr Val
                   605   610   615

Gly Ala Cys Phe Asp Arg Leu Leu His Pro Asp Ala Val Pro Ala
                   620   625   630

Leu Phe Arg Thr Val Pro Val Phe Thr Leu Pro Ser Gln Leu Pro
                   635   640   645

Asp Phe Leu Gly Ala Leu Gln Gln Pro Arg Ala Pro Arg Ser Gly
                   650   655   660

Arg Leu Gln Glu Arg Ala Glu Gln Val Ser Arg Ala Leu Gln Pro
                   665   670   675

Ala Leu Asp Ser Tyr Phe His Pro Pro Gly Thr Pro Ala Pro Gly
                   680   685   690

Arg Gly Val Gly Pro Gly Ala Gly Pro Gly Ala Gly Asp Gly Thr
                   695   700   705

<210> 163
<211> 2478
<212> DNA
<213> Homo Sapien

<400> 163
 gtcagtgcgg gaggccggtc agccaccaag atgactgaca ggttcagctc 50

 tctgcagcac actaccctca agccacctga tgtgacctgt atctccaaag 100

 tgagatcgat tcagatgatt gttcatccta cccccacgcc aatccgtgca 150

 ggcgatggcc accggctaac cctggaagac atcttccatg acctgttcta 200

 ccacttagag ctccaggtca accgcaccta ccaaatgcac cttggaggga 250

 agcagagaga atatgagttc ttcggcctga cccctgacac agagttcctt 300

 ggcaccatca tgatttgcgt tcccacctgg gccaaggaga gtgcccccta 350

 catgtgccga gtgaagacac tgccagaccg gacatggacc tactccttct 400

ccggagcctt cctgttctcc atgggcttcc tcgtcgcagt actctgctac 450

ctgagctaca gatatgtcac caagccgcct gcacctccca actccctgaa 500

cgtccagcga gtcctgactt tccagccgct gcgcttcatc caggagcacg 550

tcctgatccc tgtctttgac ctcagcggcc ccagcagtct ggcccagcct 600

gtccagtact cccagatcag ggtgtctgga cccagggagc ccgcaggagc 650
tccacagcgg catagcctgt ccgagatcac ctacttaggg cagccagaca 700

tctccatcct ccagccctcc aacgtgccac ctccccagat cctctcccca 750

ctgtcctatg ccccaaacgc tgcccctgag gtcgggcccc catcctatgc 800

acctcaggtg acccccgaag ctcaattccc attctacgcc ccacaggcca 850

tctctaaggt ccagccttcc tcctatgccc ctcaagccac tccggacagc 900

tggcctccct cctatggggt atgcatggaa ggttctggca aagactcccc 950

cactgggaca ctttctagtc ctaaacacct taggcctaaa ggtcagcttc 1000

agaaagagcc accagctgga agctgcatgt taggtggcct ttctctgcag 1050

gaggtgacct ccttggctat ggaggaatcc caagaagcaa aatcattgca 1100

ccagcccctg gggatttgca cagacagaac atctgaccca aatgtgctac 1150

acagtgggga ggaagggaca ccacagtacc taaagggcca gctccccctc 1200

ctctcctcag tccagatcga gggccacccc atgtccctcc ctttgcaacc 1250

tccttccggt ccatgttccc cctcggacca aggtccaagt ccctggggcc 1300

tgctggagtc ccttgtgtgt cccaaggatg aagccaagag cccagcccct 1350

gagacctcag acctggagca gcccacagaa ctggattctc ttttcagagg 1400

cctggccctg actgtgcagt gggagtcctg aggggaatgg gaaaggcttg 1450

gtgcttcctc cctgtcccta cccagtgtca catccttggc tgtcaatccc 1500

atgcctgccc atgccacaca ctctgcgatc tggcctcaga cgggtgccct 1550

tgagagaagc agagggagtg gcatgcaggg cccctgccat gggtgcgctc 1600

ctcaccggaa caaagcagca tgataaggac tgcagcgggg gagctctggg 1650

gagcagcttg tgtagacaag cgcgtgctcg ctgagccctg caaggcagaa 1700

atgacagtgc aaggaggaaa tgcagggaaa ctcccgaggt ccagagcccc 1750

acctcctaac accatggatt caaagtgctc agggaatttg cctctccttg 1800

ccccattcct ggccagtttc acaatctagc tcgacagagc atgaggcccc 1850

224

```
tgcctcttct gtcattgttc aaaggtggga agagagcctg gaaaagaacc 1900

aggcctggaa aagaaccaga aggaggctgg gcagaaccag aacaacctgc 1950

acttctgcca aggccagggc cagcaggacg gcaggactct agggaggggt 2000

gtggcctgca gctcattccc agccagggca actgcctgac gttgcacgat 2050

ttcagcttca ttcctctgat agaacaaagc gaaatgcagg tccaccaggg 2100

agggagacac acaagccttt tctgcaggca ggagtttcag accctatcct 2150

gagaatgggg tttgaaagga aggtgagggc tgtggcccct ggacgggtac 2200

aataacacac tgtactgatg tcacaacttt gcaagctctg ccttgggttc 2250

agcccatctg ggctcaaatt ccagcctcac cactcacaag ctgtgtgact 2300

tcaaacaaat gaaatcagtg cccagaacct cggtttcctc atctgtaatg 2350

tggggatcat aacacctacc tcatggagtt gtggtgaaga tgaaatgaag 2400

tcatgtcttt aaagtgctta atagtgcctg gtacatgggc agtgcccaat 2450

aaacggtagc tatttaaaaa aaaaaaaa 2478
```

<210> 164
<211> 574
<212> PRT
<213> Homo Sapien

<400> 164
```
Met Arg Thr Leu Leu Thr Ile Leu Thr Val Gly Ser Leu Ala Ala
 1               5                  10                  15

His Ala Pro Glu Asp Pro Ser Asp Leu Leu Gln His Val Lys Phe
                20                  25                  30

Gln Ser Ser Asn Phe Glu Asn Ile Leu Thr Trp Asp Ser Gly Pro
                35                  40                  45

Glu Gly Thr Pro Asp Thr Val Tyr Ser Ile Glu Tyr Lys Thr Tyr
                50                  55                  60

Gly Glu Arg Asp Trp Val Ala Lys Lys Gly Cys Gln Arg Ile Thr
                65                  70                  75

Arg Lys Ser Cys Asn Leu Thr Val Glu Thr Gly Asn Leu Thr Glu
                80                  85                  90

Leu Tyr Tyr Ala Arg Val Thr Ala Val Ser Ala Gly Gly Arg Ser
                95                  100                 105

Ala Thr Lys Met Thr Asp Arg Phe Ser Ser Leu Gln His Thr Thr
                110                 115                 120

Leu Lys Pro Pro Asp Val Thr Cys Ile Ser Lys Val Arg Ser Ile
```

225

```
                    125                 130                 135

Gln Met Ile Val His Pro Thr Pro Thr Pro Ile Arg Ala Gly Asp
                    140                 145                 150

Gly His Arg Leu Thr Leu Glu Asp Ile Phe His Asp Leu Phe Tyr
                    155                 160                 165

His Leu Glu Leu Gln Val Asn Arg Thr Tyr Gln Met His Leu Gly
                    170                 175                 180

Gly Lys Gln Arg Glu Tyr Glu Phe Phe Gly Leu Thr Pro Asp Thr
                    185                 190                 195

Glu Phe Leu Gly Thr Ile Met Ile Cys Val Pro Thr Trp Ala Lys
                    200                 205                 210

Glu Ser Ala Pro Tyr Met Cys Arg Val Lys Thr Leu Pro Asp Arg
                    215                 220                 225

Thr Trp Thr Tyr Ser Phe Ser Gly Ala Phe Leu Phe Ser Met Gly
                    230                 235                 240

Phe Leu Val Ala Val Leu Cys Tyr Leu Ser Tyr Arg Tyr Val Thr
                    245                 250                 255

Lys Pro Pro Ala Pro Pro Asn Ser Leu Asn Val Gln Arg Val Leu
                    260                 265                 270

Thr Phe Gln Pro Leu Arg Phe Ile Gln Glu His Val Leu Ile Pro
                    275                 280                 285

Val Phe Asp Leu Ser Gly Pro Ser Ser Leu Ala Gln Pro Val Gln
                    290                 295                 300

Tyr Ser Gln Ile Arg Val Ser Gly Pro Arg Glu Pro Ala Gly Ala
                    305                 310                 315

Pro Gln Arg His Ser Leu Ser Glu Ile Thr Tyr Leu Gly Gln Pro
                    320                 325                 330

Asp Ile Ser Ile Leu Gln Pro Ser Asn Val Pro Pro Pro Gln Ile
                    335                 340                 345

Leu Ser Pro Leu Ser Tyr Ala Pro Asn Ala Ala Pro Glu Val Gly
                    350                 355                 360

Pro Pro Ser Tyr Ala Pro Gln Val Thr Pro Glu Ala Gln Phe Pro
                    365                 370                 375

Phe Tyr Ala Pro Gln Ala Ile Ser Lys Val Gln Pro Ser Ser Tyr
                    380                 385                 390

Ala Pro Gln Ala Thr Pro Asp Ser Trp Pro Pro Ser Tyr Gly Val
                    395                 400                 405

Cys Met Glu Gly Ser Gly Lys Asp Ser Pro Thr Gly Thr Leu Ser
```

```
                  410                        415                        420

Ser Pro Lys His Leu Arg Pro Lys Gly Gln Leu Gln Lys Glu Pro
                425                      430                      435

Pro Ala Gly Ser Cys Met Leu Gly Gly Leu Ser Leu Gln Glu Val
                440                      445                      450

Thr Ser Leu Ala Met Glu Glu Ser Gln Glu Ala Lys Ser Leu His
                455                      460                      465

Gln Pro Leu Gly Ile Cys Thr Asp Arg Thr Ser Asp Pro Asn Val
                470                      475                      480

Leu His Ser Gly Glu Glu Gly Thr Pro Gln Tyr Leu Lys Gly Gln
                485                      490                      495

Leu Pro Leu Leu Ser Ser Val Gln Ile Glu Gly His Pro Met Ser
                500                      505                      510

Leu Pro Leu Gln Pro Pro Ser Gly Pro Cys Ser Pro Ser Asp Gln
                515                      520                      525

Gly Pro Ser Pro Trp Gly Leu Leu Glu Ser Leu Val Cys Pro Lys
                530                      535                      540

Asp Glu Ala Lys Ser Pro Ala Pro Glu Thr Ser Asp Leu Glu Gln
                545                      550                      555

Pro Thr Glu Leu Asp Ser Leu Phe Arg Gly Leu Ala Leu Thr Val
                560                      565                      570

Gln Trp Glu Ser
```

<210> 165
<211> 1060
<212> DNA
<213> Homo Sapien

<400> 165

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tggcctactg gaaaaaaaaa aaaaaaaaa aaaagtcacc cgggcccgcg 50

gtggccacaa catggctgcg gcgccggggc tgctcttctg gctgttcgtg 100

ctgggggcgc tctggtgggt cccgggccag tcggatctca gccacggacg 150

gcgtttctcg gacctcaaag tgtgcgggga cgaagagtgc agcatgttaa 200

tgtaccgtgg gaaagctctt gaagacttca cgggccctga ttgtcgtttt 250

gtgaatttta aaaaaggtga cgatgtatat gtctactaca aactggcagg 300

gggatccctt gaactttggg ctggaagtgt tgaacacagt tttggatatt 350

ttccaaaaga tttgatcaag gtacttcata aatacacgga agaagagcta 400
```

catattccag cagatgagac agactttgtc tgctttgaag gaggaagaga 450

tgattttaat agttataatg tagaagagct tttaggatct ttggaactgg 500

aggactctgt acctgaagag tcgaagaaag ctgaagaagt ttctcagcac 550

agagagaaat ctcctgagga gtctcggggg cgtgaacttg accctgtgcc 600

tgagcccgag gcattcagag ctgattcaga ggatggagaa ggtgctttct 650

cagagagcac cgagggggctg cagggacagc cctcagctca ggagagccac 700

cctcacacca gcggtcctgc ggctaacgct cagggagtgc agtcttcgtt 750

ggacactttt gaagaaattc tgcacgataa attgaaagtg ccgggaagcg 800

aaagcagaac tggcaatagt tctcctgcct cggtggagcg ggagaagaca 850

gatgcttaca aagtcctgaa aacagaaatg agtcagagag gaagtggaca 900

gtgcgttatt cattacagca aaggatttcg ttggcatcaa aatctaagtt 950
tgttttacaa agattgtttt tagtactaag ctgccttggc agtttgcatt 1000

tttgagccaa acaaaaatat attattttcc cttctaagta aaaaaaaaaa 1050

aaaaaaaaaa 1060

<210> 166
<211> 303
<212> PRT
<213> Homo Sapien

<400> 166
 Met Ala Ala Ala Pro Gly Leu Leu Phe Trp Leu Phe Val Leu Gly
  1   5   10   15

 Ala Leu Trp Trp Val Pro Gly Gln Ser Asp Leu Ser His Gly Arg
                 20   25   30

 Arg Phe Ser Asp Leu Lys Val Cys Gly Asp Glu Glu Cys Ser Met
                 35   40   45

 Leu Met Tyr Arg Gly Lys Ala Leu Glu Asp Phe Thr Gly Pro Asp
                 50   55   60

 Cys Arg Phe Val Asn Phe Lys Lys Gly Asp Asp Val Tyr Val Tyr
                 65   70   75

 Tyr Lys Leu Ala Gly Gly Ser Leu Glu Leu Trp Ala Gly Ser Val
                 80   85   90

 Glu His Ser Phe Gly Tyr Phe Pro Lys Asp Leu Ile Lys Val Leu
                 95   100   105

 His Lys Tyr Thr Glu Glu Glu Leu His Ile Pro Ala Asp Glu Thr
                 110   115   120

228

```
Asp Phe Val Cys Phe Glu Gly Gly Arg Asp Asp Phe Asn Ser Tyr
              125                 130                 135

Asn Val Glu Glu Leu Leu Gly Ser Leu Glu Leu Glu Asp Ser Val
              140                 145                 150

Pro Glu Glu Ser Lys Lys Ala Glu Glu Val Ser Gln His Arg Glu
              155                 160                 165

Lys Ser Pro Glu Glu Ser Arg Gly Arg Glu Leu Asp Pro Val Pro
              170                 175                 180

Glu Pro Glu Ala Phe Arg Ala Asp Ser Glu Asp Gly Glu Gly Ala
              185                 190                 195

Phe Ser Glu Ser Thr Glu Gly Leu Gln Gly Gln Pro Ser Ala Gln
              200                 205                 210

Glu Ser His Pro His Thr Ser Gly Pro Ala Ala Asn Ala Gln Gly
              215                 220                 225

Val Gln Ser Ser Leu Asp Thr Phe Glu Glu Ile Leu His Asp Lys
              230                 235                 240

Leu Lys Val Pro Gly Ser Glu Ser Arg Thr Gly Asn Ser Ser Pro
              245                 250                 255

Ala Ser Val Glu Arg Glu Lys Thr Asp Ala Tyr Lys Val Leu Lys
              260                 265                 270

Thr Glu Met Ser Gln Arg Gly Ser Gly Gln Cys Val Ile His Tyr
              275                 280                 285

Ser Lys Gly Phe Arg Trp His Gln Asn Leu Ser Leu Phe Tyr Lys
              290                 295                 300

Asp Cys Phe


<210> 167
<211> 2570
<212> DNA
<213> Homo Sapien

<400> 167
 ccaggaccag ggcgcaccgg ctcagcctct cacttgtcag aggccgggga 50

 agagaagcaa agcgcaacgg tgtggtccaa gccggggctt ctgcttcgcc 100

 tctaggacat acacgggacc ccctaacttc agtcccccaa acgcgcaccc 150

 tcgaagtctt gaactccagc cccgcacatc cacgcgcggc acaggcgcgg 200

 caggcggcag gtcccggccg aaggcgatgc gcgcaggggg tcgggcagct 250

 gggctcgggc ggcgggagta gggcccggca gggaggcagg gaggctgcat 300
```

```
attcagagtc gcgggctgcg ccctgggcag aggccgccct cgctccacgc 350

aacacctgct gctgccaccg cgccgcgatg agccgcgtgg tctcgctgct 400

gctgggcgcc gcgctgctct gcggccacgg agccttctgc cgccgcgtgg 450

tcagcggcca aaaggtgtgt tttgctgact tcaagcatcc ctgctacaaa 500

atggcctact tccatgaact gtccagccga gtgagctttc aggaggcacg 550

cctggcttgt gagagtgagg gaggagtcct cctcagcctt gagaatgaag 600

cagaacagaa gttaatagag agcatgttgc aaaacctgac aaaacccggg 650

acagggattt ctgatggtga tttctggata gggctttgga ggaatggaga 700

tgggcaaaca tctggtgcct gcccagatct ctaccagtgg tctgatggaa 750

gcaattccca gtaccgaaac tggtacacag atgaaccttc ctgcggaagt 800

gaaaagtgtg ttgtgatgta tcaccaacca actgccaatc ctggccttgg 850

gggtccctac ctttaccagt ggaatgatga caggtgtaac atgaagcaca 900

attatatttg caagtatgaa ccagagatta atccaacagc ccctgtagaa 950

aagccttatc ttacaaatca accaggagac acccatcaga atgtggttgt 1000
tactgaagca ggtataattc ccaatctaat ttatgttgtt ataccaacaa 1050

tacccctgct cttactgata ctggttgctt ttggaacctg ttgtttccag 1100

atgctgcata aaagtaaagg aagaacaaaa actagtccaa accagtctac 1150

actgtggatt tcaaagagta ccagaaaaga aagtggcatg gaagtataat 1200

aactcattga cttggttcca gaattttgta attctggatc tgtataagga 1250

atggcatcag aacaatagct tggaatggct tgaaatcaca aaggatctgc 1300

aagatgaact gtaagctccc ccttgaggca aatattaaag taatttttat 1350

atgtctatta tttcatttaa agaatatgct gtgctaataa tggagtgaga 1400

catgcttatt ttgctaaagg atgcacccaa acttcaaact tcaagcaaat 1450

gaaatggaca atgcagataa agttgttatc aacacgtcgg gagtatgtgt 1500

gttagaagca attcctttta tttctttcac ctttcataag ttgttatcta 1550

gtcaatgtaa tgtatattgt attgaaattt acagtgtgca aaagtatttt 1600

acctttgcat aagtgtttga taaaaatgaa ctgttctaat atttattttt 1650

atggcatctc atttttcaat acatgctctt ttgattaaag aaacttatta 1700

ctgttgtcaa ctgaattcac acacacacaa atatagtacc atagaaaaag 1750
```

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tttgttttct cgaaataatt catctttcag cttctctgct tttggtcaat 1800

gtctaggaaa tctcttcaga aataagaagc tatttcatta agtgtgatat 1850

aaacctcctc aaacatttta cttagaggca aggattgtct aatttcaatt 1900

gtgcaagaca tgtgccttat aattattttt agcttaaaat taaacagatt 1950

ttgtaataat gtaactttgt taataggtgc ataaacacta atgcagtcaa 2000

tttgaacaaa agaagtgaca tacacaatat aaatcatatg tcttcacacg 2050

ttgcctatat aatgagaagc agctctctga gggttctgaa atcaatgtgg 2100

tccctctctt gcccactaaa caaagatggt tgttcggggt ttgggattga 2150

cactggaggc agatagttgc aaagttagtc taaggtttcc ctagctgtat 2200

ttagcctctg actatattag tatacaaaga ggtcatgtgg ttgagaccag 2250

gtgaatagtc actatcagtg tggagacaag cacagcacac agacatttta 2300

ggaaggaaag gaactacgaa atcgtgtgaa aatgggttgg aacccatcag 2350

tgatcgcata ttcattgatg agggtttgct tgagatagaa aatggtggct 2400

cctttctgtc ttatctccta gtttcttcaa tgcttacgcc ttgttcttct 2450

caagagaaag ttgtaactct ctggtcttca tatgtccctg tgctcctttt 2500

aaccaaataa agagttcttg tttctggggg aaaaaaaaaa aaaaaaaaaa 2550

aaaaaaaaaa aaaaaaaaaa 2570
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<210> 168
<211> 273
<212> PRT
<213> Homo Sapien

<400> 168

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Met Ser Arg Val Val Ser Leu Leu Leu Gly Ala Ala Leu Leu Cys
 1               5                  10                  15

Gly His Gly Ala Phe Cys Arg Arg Val Val Ser Gly Gln Lys Val
                20                  25                  30

Cys Phe Ala Asp Phe Lys His Pro Cys Tyr Lys Met Ala Tyr Phe
                35                  40                  45

His Glu Leu Ser Ser Arg Val Ser Phe Gln Glu Ala Arg Leu Ala
                50                  55                  60

Cys Glu Ser Glu Gly Gly Val Leu Leu Ser Leu Glu Asn Glu Ala
                65                  70                  75

Glu Gln Lys Leu Ile Glu Ser Met Leu Gln Asn Leu Thr Lys Pro
                80                  85                  90
```

```
Gly Thr Gly Ile Ser Asp Gly Asp Phe Trp Ile Gly Leu Trp Arg
                95                  100                 105

Asn Gly Asp Gly Gln Thr Ser Gly Ala Cys Pro Asp Leu Tyr Gln
                110                 115                 120

Trp Ser Asp Gly Ser Asn Ser Gln Tyr Arg Asn Trp Tyr Thr Asp
                125                 130                 135

Glu Pro Ser Cys Gly Ser Glu Lys Cys Val Val Met Tyr His Gln
                140                 145                 150

Pro Thr Ala Asn Pro Gly Leu Gly Gly Pro Tyr Leu Tyr Gln Trp
                155                 160                 165

Asn Asp Asp Arg Cys Asn Met Lys His Asn Tyr Ile Cys Lys Tyr
                170                 175                 180

Glu Pro Glu Ile Asn Pro Thr Ala Pro Val Glu Lys Pro Tyr Leu
                185                 190                 195

Thr Asn Gln Pro Gly Asp Thr His Gln Asn Val Val Val Thr Glu
                200                 205                 210

Ala Gly Ile Ile Pro Asn Leu Ile Tyr Val Val Ile Pro Thr Ile
                215                 220                 225

Pro Leu Leu Leu Leu Ile Leu Val Ala Phe Gly Thr Cys Cys Phe
                230                 235                 240

Gln Met Leu His Lys Ser Lys Gly Arg Thr Lys Thr Ser Pro Asn
                245                 250                 255
Gln Ser Thr Leu Trp Ile Ser Lys Ser Thr Arg Lys Glu Ser Gly
                260                 265                 270

Met Glu Val


<210> 169
<211> 43
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 169
 tgtaaaacga cggccagtta aatagacctg caattattaa tct 43

<210> 170
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe
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<400> 170
caggaaacag ctatgaccac ctgcacacct gcaaatccat t 41